

CRO-BAR

CONSTRUCTION

Cro-Bar Construction Ltd.

*"Building for
the Future"*

Building & Civil Engineering Contractors



CRO-BAR

CONSTRUCTION

COMMITMENT | SERVICE | QUALITY

MISSION STATEMENT

"To provide each and every client with the highest level of commitment, service and quality, while maintaining the flexibility to tailor solutions to meet each individual client's requirements"

HEALTH & SAFETY

Cro-Bar Construction Ltd. is totally committed to all aspects of Health & Safety and we pride ourselves in our abilities to create a "safe system of work" at all times.

We apply strict Health & Safety procedures through workforce training and a rigorous "Quality Management Assurance Programme".

We enjoy an excellent Health & Safety record and we continually strive to improve our current processes and procedures. The loyalty of our management and workforce is a product of our continuous investment in their personal development and training.

ENVIRONMENTAL MANAGEMENT

Prior to any work commencing, all projects are assessed and procedures put in place to manage any environmental concerns. Particular emphasis is placed on protecting waterways, fuel management, spillage, noise reduction, habitat protection and recycling of materials to minimise waste.



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UTILITY TRENCHING

Cro-Bar Construction Ltd. has established itself as a leader in the field of underground plant installation.

From telecommunication and cable television networks, to electricity, water, gas and storm/sewer pipelines, our highly trained staff and workforce, coupled with our varied range of plant and equipment, allows us to provide a tailor made, cost effective service to meet your specific requirements.

OUR SERVICE OFFERING INCLUDES:

- *Experienced project management team supported by highly skilled and fully accredited work teams.*
- *Strict health and safety procedures and a rigorous quality management assurance program.*
- *Route survey, planning and design to deliver cost-effective construction solutions and as built records.*
- *A one-stop-shop solution to clients whatever their trenching requirements, plus all associated work, such as chamber construction, pumping stations, shafts, building entries and reinstatement.*

Operationally **Cro-Bar Construction Ltd.** is particularly well equipped to meet its clients needs in the area of utility trenching. Our complete range of the latest small plant and heavy equipment allows us to tackle any project (regardless of size) in an effective and professional manner delivering a product of the highest quality.



UTILITY TRENCHING

THE "FLATLINER" SYSTEM

The "Flatliner" system is a mini-ducting solution that we have developed to provide a cost effective offering to our clients, where a cheaper cabling or small service solution is required. The system has flexibility in size and number of sub-ducts to meet our clients needs.

OUR RANGE OF EQUIPMENT INCLUDES:

- 1 (i) *A fleet of topcutters of various sizes, capable of working in anything from the most confined work areas to difficult city and urban carriageways.*
- (ii) *A full range of other attachments are also available for the above tractor units, such as trenching chains, planers and rock wheels, allowing us the flexibility to tackle any project in any surface in either urban or rural areas.*
- 2 *A fleet of excavators and rubber tyred diggers, ranging from 1 ton mini-digger to large excavators.*
- 3 *A fleet of specialised transport such as grab trucks, hot boxes and concrete trucks to support the works.*
- 4 *A full range of the latest small plant such as rollers, roadsaws and compactors, allowing the construction of the complete trench to the highest standards.*



OTHER TRENCHING SOLUTIONS

Today, technology has provided the Civil Engineering Industry with various models of trenchers in both the chain and disc version, offering state-of-the-art solutions to successfully handle any medium to large contracts, in any ground condition, guaranteeing higher productivity and lower costs.

Cro-Bar Construction Ltd. (having worked with this technology) is in a position to provide its clients with both the advice and the solutions to meet their requirements.

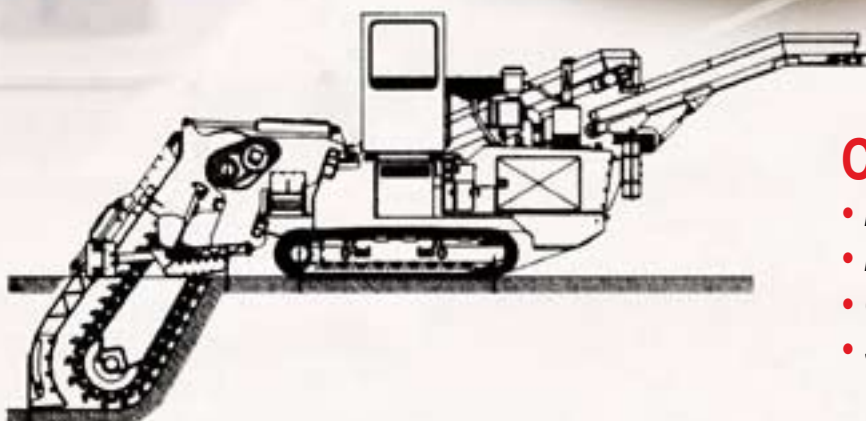
Outlined below are some available options.

CARRIAGEWAY TRENCHING

For carriageway trenching various sizes of chain trenchers are available. They vary from the smaller 10 ton machines for medium size light works, up to 45 ton machines for larger works in rock.

Conveyors are fitted to these machines providing a self-loading capability.

In some trenchers self-levelling undercarriage and depth control devices are fitted to accommodate any ground contours and guarantees specified cover.



CHAIN TECHNOLOGY

- *Digs anything from Dirt to Rock*
- *Recycles soil*
- *Gives a constant trench size*
- *Saves time and money*

OTHER TRENCHING SOLUTIONS

OFF ROAD WORKS

For off-road works **Cro-Bar Construction Ltd.** can provide a range of equipment for use in all ground conditions.

Where transport of stores and materials are hindered by ground conditions, a range of specialised transport is available to guarantee the required support for the trenchers.

TRENCHING CHAINS

These come in various sizes depending on job requirements. However, instead of a front loading conveyor, the off-road version has a side conveyor discharge.

Some trenchers are also fitted with an automatic pipe or duct laying system where required.



BUCKET WHEEL TRENCHERS

Whereas the trenching chain is primarily used in good soil and in rocky conditions, the bucket wheel is suitable for work in wet soft ground conditions, such as peat and sticky clay.



TRENCHLESS ALTERNATIVES

In our constant efforts to improve both the range and flexibility of our offerings, **Cro-Bar Construction Ltd.** can provide the following solutions to its clients, in situations where traditional open-cut trench is not an option. Using the latest in cable avoidance tools and x-ray equipment, our highly trained and experienced staff can quickly assess which of the following options can be offered as an alternative to conventional trenching methods.

The advantages of "Trenchless Technology" over traditional open cut cannot be overlooked when site & project conditions are favourable.



ADVANTAGES OF TRENCHLESS ALTERNATIVES

- ***Environmentally Friendly***



- ***Minimal disruption to traffic and public***
- ***Reduced construction costs***

- ***Time Saving***
- ***Avoids open cut trenching***



- ***Eliminates extra Local Authority charges relating to reinstatement & long term damages***



TRENCHLESS ALTERNATIVES

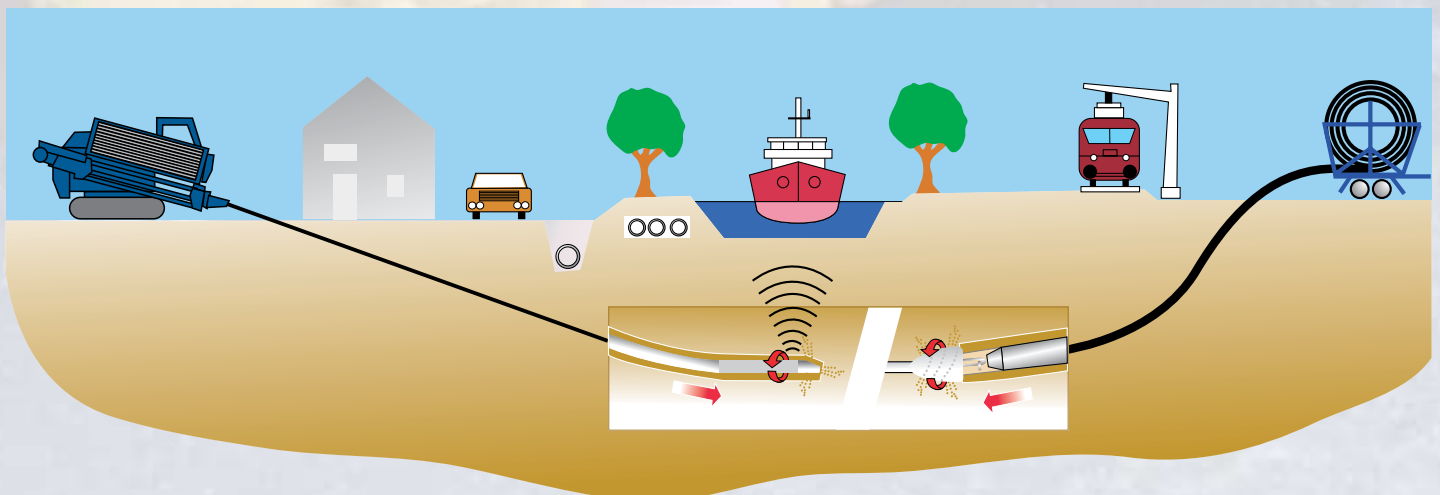
HORIZONTAL DIRECTIONAL DRILLING (HDD)

In situations such as the crossing of busy motorways, railway-lines or rivers the direction boring system is an excellent alternative.

The capability to monitor the depth and line of the bore head from a launch pit on one side to a pre-determined end point on the other side, is by far the best straight line solution in such situations.



Cro-Bar Construction Ltd. can offer a range of such equipment to meet any challenges which may arise due to length of bore, ground conditions or duct/pipe formations.



TRENCHLESS ALTERNATIVES

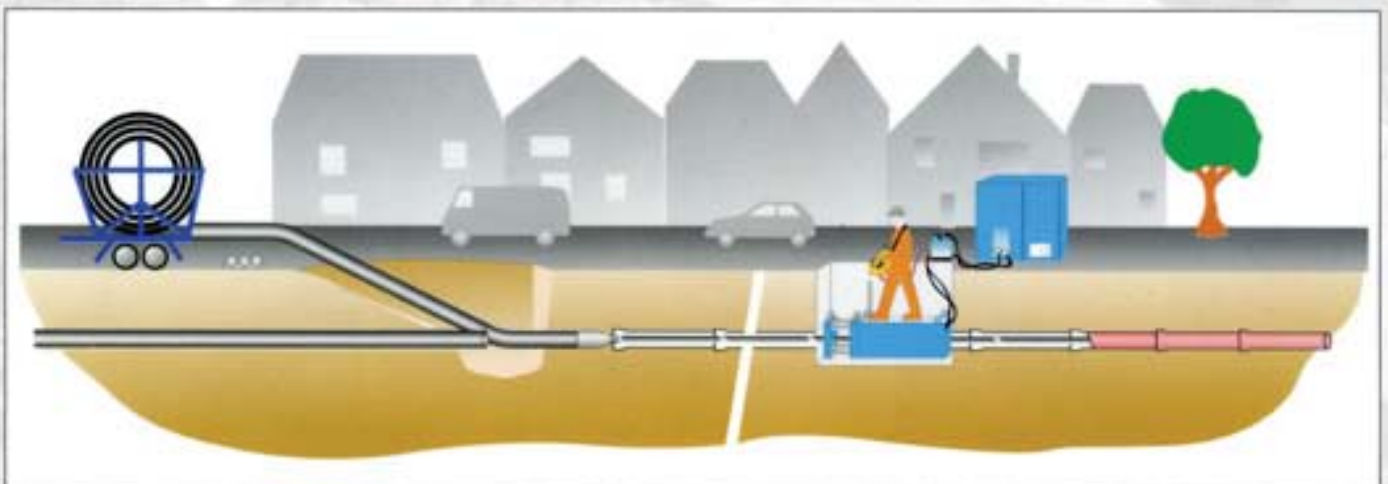
PIPE BURSTING

The static pipe bursting method is an installation system used by **Cro-Bar Construction Ltd.** for the trenchless renewal of gas and water lines in sensitive soil conditions, where other external lines and buildings are within the immediate vicinity.

When replacing pipes with the static bursting technique, a bursting rod is pushed from a start pit (shaft) through the old pipe into a target pit (shaft).

On arrival in the target pit, the bursting blade with the new pipe connected is attached to the rod string.

When pulling back the rod string the old pipe is destroyed by the blade, the pipe fragments are displaced into the surrounding soil and the new pipe (of equal or larger diameter) is pulled in simultaneously.



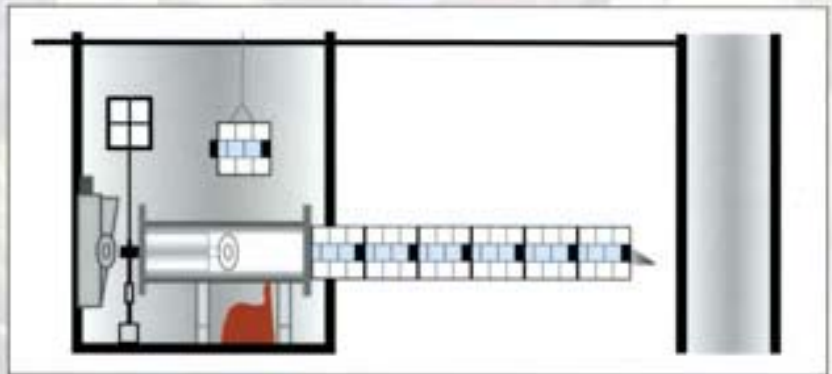
TRENCHLESS ALTERNATIVES

GUIDED AUGER BORING

Guided Auger Boring is a trenchless method of installing pipe by **Cro-Bar Construction Ltd.** in situations of limited access, such as beneath a busy road or railway crossing, where no surface heave or settlement is acceptable.

Installation is a three-step operation:

1. Pilot rods are accurately guided through the ground using a theodolite-camera and laser target.
2. Steel casings containing auger drills are attached to the last pilot rod and pushed through the ground. Excavated material is conveyed back to the launch pit as the pilot rods are pushed into the reception pit.
3. The steel casing can be left as sacrificial duct or the product pipe is installed behind the steel casings that are pushed into the reception pit.



PIPE RAMMING

For the dynamic pipe installation according to the ramming technique pneumatically driven pipe ramming machines are used. These machines enable the economic installation of open steel pipes as casing or product pipes up to 4000 mm diameter over lengths up to 80 m.

Steel casings with a cutting edge are driven horizontally using compressed air, leaving displaced soil inside the casing.

This is later removed by either:

1. Compressed air or water
2. Manually, depending upon size of bore



CABLE PULLING & JOINTING

At **Cro-Bar Construction Ltd.** we strive for excellence in everything we do. Customer satisfaction is the corner stone on which our business is built. As a supplier of services to both the Electricity and Telecommunications markets we can undertake cabling work of any size or complexity in both urban and rural areas on a national basis.

Cro-Bar Construction Ltd. has a record of delivering fast-track solutions to this rapidly developing market, thereby providing flexibility in meeting their individual client needs.

We can adapt our resources without compromising any Health & Safety, Environmental or Quality standards.

With this in mind, **Cro-Bar Construction Ltd.**

can provide turnkey solutions from Design to Construction and Commissioning.

TELECOMS & CABLE TELEVISION

Cro-Bar Construction Ltd. is a single source provider for delivery of advanced fixedline and wireless communications systems. Our understanding of the telecommunications business, coupled with our expertise in infrastructure development, operations

and optimisation, provides our clients with fast, simple and highly effective means to achieve goals with maximum efficiency and minimal interruption.

OUR OFFERINGS INCLUDE

- *Ducting, chamber & cabinet construction*
- *Cable installation - fibre, copper, co-ax*
- *Trunk/Long-haul Route construction*
- *Headend & Hubsite construction*
- *Wireless network mast erection*
- *Special Engineering Difficulties*
- *Access network construction*
- *Jointing, termination, testing*
- *Blown Fibre Systems*
- *Building Entries*
- *Network Audits*



CABLE PULLING & JOINTING

ELECTRICAL CABLING

Cro-Bar Construction Ltd. are leaders in this very specialised field of electrical cable pulling & jointing. We employ the very latest techniques and technology in the undertaking of all our contracts, particularly in the field of electrical cable installation, where we use the very latest jointing methods.

Our employees attend comprehensive internal & external training programmes concerned with current legislation, health & safety procedures.

COMPUTERISED READOUT MONITORS

Our Computerised Readout Monitors record the pulling forces applied during cable installation, as well as calculating the average force being applied to the cable, measuring length of pull, detecting any pull forces above pre-defined limits and informing the operator by means of a sounder and alarm light if allowable pulling forces are being approached.



GROUNDWORKS

From foundations for individual buildings to entire groundworks packages,

Cro-Bar Construction Ltd. can meet your needs and specifications.

From concrete bases and hardstanding areas to floors for various applications, including workshops, sheds, yards and car parks our skilled workforce will deliver on time and to budget.

At **Cro-Bar Construction Ltd.** we have the resources and expertise to carry out large or small scale excavations, including the disposal of material not being re-used on site.

Cro-Bar Construction Ltd. can manage part of, or a complete project from conception to completion, meeting stringent targets for quality, cost, program and safety, whilst still retaining the flexibility to make rapid changes and adapt when necessary.

Our aim is to provide our clients with a straightforward, yet highly professional, service without the usual frustrations associated with the industry, from conception and design, through to planning and the finished product.



VIBRATORY PLOUGHS

Where ground conditions allow, mole-ploughing is certainly the most economical and profitable method of laying cable and small duct.

The ability to cut a clean narrow channel to a required depth, leaving a track that is barely visible to the eye and requiring minimal backfilling (if any), allows us to offer a highly cost effective solution.

SURVEYING SOLUTIONS

Cro-Bar Construction Ltd. through one of its associated companies, can offer a specialist range of surveying & consultancy solutions.



These include Route Planning, Mobile Mapping, Land Surveying, Utility Packs with focus on reducing Health & Safety risks whilst reducing time and costs. This results in innovative solutions and continually improved working practices, to ensure our clients get the highest quality results in the most cost effective manner.

POLE ERECTION

Cro-Bar Construction Ltd. can also provide its clients with overground expertise as well as underground. Our fleet of customised poling trucks and specially fitted rubber tyred backhoe loaders, allow us to offer our client both on-road and off-road capabilities.

Where ground conditions will not allow for excavation of hole by auger, alternative methods can be offered.



Cro-Bar Construction Ltd. are leaders in the field of drainage and underground plant installation in the rail industry. Our unique level of service provision combined with our large well-equipped workforce means that we are able to provide safe and innovative solutions to complex construction challenges.

OUR SERVICES INCLUDE

- **Storm/sewer pipelines**
- **Telecommunications**
- **Electricity**
- **Water**
- **Gas**

We have the resources to install UTXs either by the traditional method of open cut or by utilising trenchless technology. This can be either horizontal directional drilling, guided augur boring, or impact moling dependant upon the location, pipe diameter or ground conditions.

Pipe bursting can be utilised to replace/upsized existing drainage/pipework with minimal excavation and reduced disruption.



Reinforced concrete works can be undertaken along with most civil engineering projects, such as:

- ***REBs***
- ***Rowsecourt Bases***
- ***Standard Lineside Bases***
- ***Driver Walkways***
- ***Troughing***
- ***Roads, Car Parks and Footways***

We promote a culture of continuous improvement and performance within the organisation. A structured approach has been taken which is independantly reviewed on a regular basis. Our staff has the practical and technical expertise to deliver solutions for any type of project.

We are establishing a track record that demonstrates our professionalism and commitment, with the goal of continuing to develop the highest possible standards.



Cro-Bar Construction Ltd. is a leader in the field of renewable energy solutions and contracting. We offer a full range of turnkey offerings to our clients in all areas of wind farm development and construction, while at all times adhering to the highest standards of health & safety and environmental management, including:

- ***Turbine Foundations***
- ***Transformer Bases***
- ***Access Road Construction***
- ***Crane Hardstands***
- ***Grid Construction***

Our ability to deliver underground M.V. & H.V. turnkey grid connections have been of particular interest to our clients, where we offer electrical and civil design, civil construction, cable supply, jointing, terminating, testing and commissioning.



OUR SERVICES INCLUDE

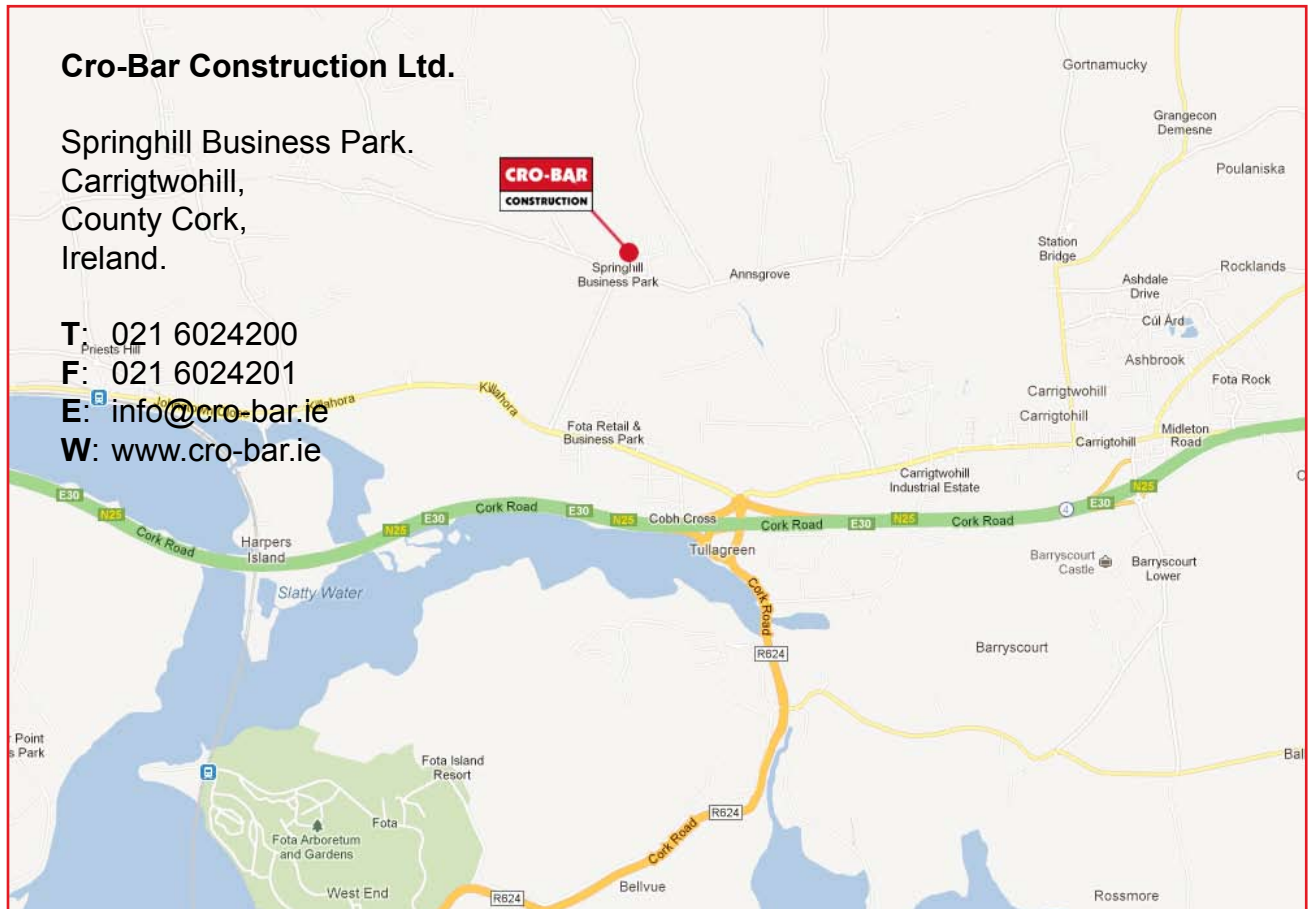
- *Technical Advice*
- *Feasibility Studies*
- *Electrical Design*
- *Civil Design*
- *Procurement*
- *Planning and Programming*
- *Health & Safety*
- *Environmental Management*
- *Peat Assessment & Management*
- *Cable & Accessory Supply*
- *Jointing, Testing & Commissioning*
- *As-Builts & Handover*



"Health & Safety and the Environment" are key drivers as to how we operate as a company and we take great pride in our record in these areas to date.



LOCATION MAP



GPS Co-ordinates

Latitude: N 51 55.000
Longitude: W 8 17.370

CRO-BAR ACCREDITATIONS



CRO-BAR

CONSTRUCTION

