

Aptus Utilities

Street Lighting Design - Case Studies

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Here at Aptus Utilities Ltd, our objective is to provide a multi-utilities solution for all clients that focuses on customer service and integrity, to simplify and accelerate the building process for construction companies and sites.

We provide an end-to-end service for all our clients and we are able to support all your needs in the best way possible. All our departments work on an interlinked system, for quick and effective communication between different utility sectors. This reduces time and pressure for yourself as there is only one a contact required for all your needs

OUR BENEFITS

The street lighting design team at Aptus Utilities has the advantage to having access to the underground services within your site areas. This allows the street lighting drawings to be designed to their maximum potential, resulting in safer and superior designs. By having access to this information, the design team are able to keep construction costs to a minimum by working alongside the Aptus Utilities electrical design team and correlating both the HV and LV underground lines.

The street lighting design team can identify potential hazards and stop any incidents occurring as we aware of underground cables, cable congestion and any other hazards within the area. In most instances it is common for main spine roads to be installed before street lighting designs are complete, this can cause issues for yourself and the street lighting installation team.

As street lighting designers we can keep installation costs to a minimum when working on road crossings as the design team takes into consideration the side on which the LV is laid and positions columns within that area meaning ducting can be laid without causing road closures and diversions at site.

If the street lighting design and installation is undertaken by 3rd; parties, this can sometimes lead to designs being overlooked with designs not being updated and re-approved. Once the street lighting design has been approved and handed to construction, the involvement of the design team is maintained for any layout changes that may occur. When revised electrical designs are completed, the street lighting design will be reviewed and amendments/re-approvals made as required to fit around the new layouts.



OUR SERVICES

The in-house street lighting design team at Aptus has great experience in delivering Section 38, Section 278, private and bespoke approved designs ensuring a timely process with a single point of contact throughout. With adopted sites, we work in conjunction with Local Authorities to ensure approval is granted within a timeframe that enables co-ordination with the multi-utility process. We work to highest standards ensuring that you have the best quality and safest lighting design that complies with the British standards.

Private developments and shared driveways can be incorporated within designs and quotations include (for example):

- Shared driveway metered networks
- Heritage style lighting
- Low level bollard and marker lighting
- Decorative feature lighting

Aptus Utilities can also look at providing a cost benefit when a combined quotation for supply, erect and connect and multi utility is requested. In this instance the design team will review the design provided and offer suggestions for changes, if applicable, to create savings in build costs. If these changes are acceptable then re-approvals will be completed in the same way as a full scheme approach.



OUR PROCESS

The street lighting design team will respond to your enquiry within 24 working hours and offer a free quotation with a simple detailed cost of what your design will include. When the lighting design is commissioned, our objective is to get an initial outline design to you within a 10-day working period ready for comments on the design.

Once you are satisfied with the preliminary design, all communications with the council are dealt with by your appointed designer, who will be your point of contact throughout the design phase. During the whole process you will be kept up to date on progress within the design/approval phase. If required, amendments can be made once designing has started as well as once approval has been given.

Once approved and complete, our estimating team will be in contact regarding a Supply, Erect and Connect (SEC) quotation for the approved lighting designs. If we are awarded the installation, the design fee that has been agreed would be credited back within the SEC quotation, as a thank you for using our services.

Within our regional depots, we hold a stock of hundreds of columns and lanterns. This decreases waiting time for the installation to commence and can be ideal for the designs which require a quick turnaround.

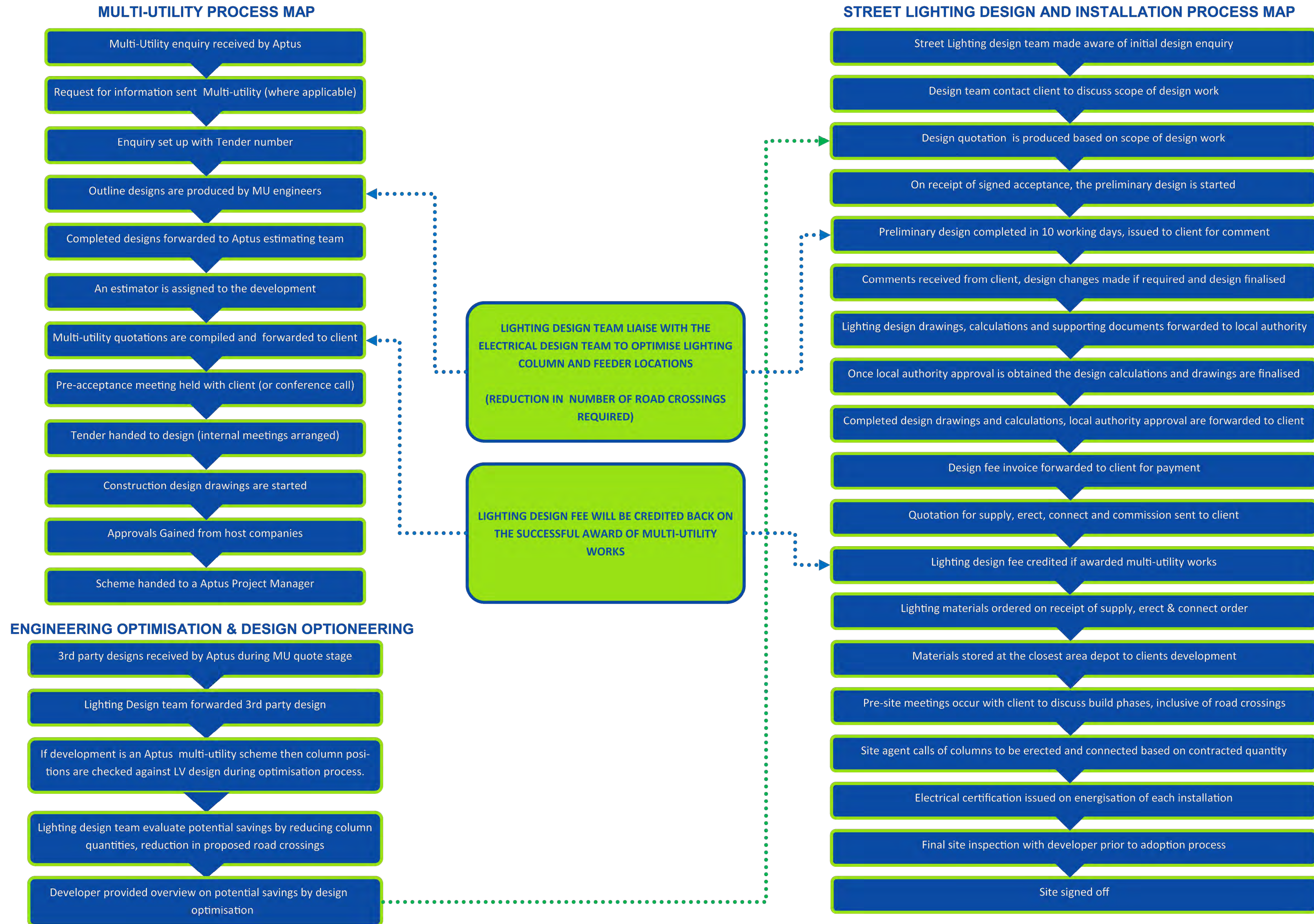


DESIGN CONSIDERATIONS

The lighting design team abides by all British regulations and all specifications of the Local Authorities to ensure approval is secured. We take into consideration a number of factors when designing both residential and commercial projects. These include:

- British Standards Institution - BS5489-1:2020 – Design of Road Lighting.
- BS EN 13201-1:2014 – Road Lighting (Guidelines on Lighting Class Selection).
- BS7671 – 18th; Edition – IET Wiring Regulations.
- Institution of Lighting Professionals – Guidance Notes & Professional Lighting Guides.
- Risk Assessments – Examples; overhead lines, underground services.
- Ecological considerations – Flora and fauna - Examples; Bats fly zones and roosting points.
- Traffic Flow considerations – Selecting accurate lighting levels for road traffic.
- Crime considerations – Choosing correct lighting levels and products to prevent crime, the fear of crime and antisocial behavior.
- Energy efficiency - Using LED's, bollards, conscientious designing, dimming regimes.
- Obtrusive Light spill, sky glow and light nuisance – onto properties and wildlife.
- Passive Safety Assessments – Requirements needed for passive safe, energy absorbing columns for risk of impact.

Process Flow Map



► Case Study

KEEPMOAT HOMES – RE-DESIGN: PRE-CONTRACT

Client: Keepmoat

Address: Croston Road, Leyland

Site layout: Housing development

THE PROJECT

Property developer Keepmoat Homes requested us to **review an existing street lighting design created by a third-party designer**. As we were also providing a multi-utility quote to the client, our lighting design team had access to the proposed LV and HV Electricity main drawings allowing them to identify approximately 25 columns that **would have required a road crossing** for an LV supply.

WHAT WE DID

Keepmoat Homes commissioned Aptus to carry out a **full lighting re-design**. Upon further value engineering analysis of the Section 38 on site works it was also determined that:

- That 54 columns would require relocation to be on the same side of the road as the proposed LV electricity main
- Five columns that would require moving to avoid being planted on the same side of the road as a proposed HV main.
- Four columns that were proposed to be installed in front of driveways.

All of these proposed not only a **significant serious safety risk** for operatives planting any proposed column but also a cost and time implication factor for the installation, something we try and avoid for any client. Needless to say, Keepmoat Homes were happy this was discovered ahead of time and appointed us to complete the installation.

Gareth Rogers, Services Manager at Keepmoat Homes said:

“We initially had a streetlight design undertaken by a third party for one of our developments. When Aptus reviewed the streetlight design in line with their proposed MU electricity designs, they managed to save us circa 50 road crossings, as they moved the columns onto the side of the footpath that had the passing LV electricity main. Not only that but they managed to negotiate away from having to install S278 columns at the entrance to the development just off the main spine road.

“A great result all round. That coupled with the fact that Aptus are providing MU mains and services and streetlight supply, install and connections, they really do offer the full package and one point of contact for everything on a site level.”

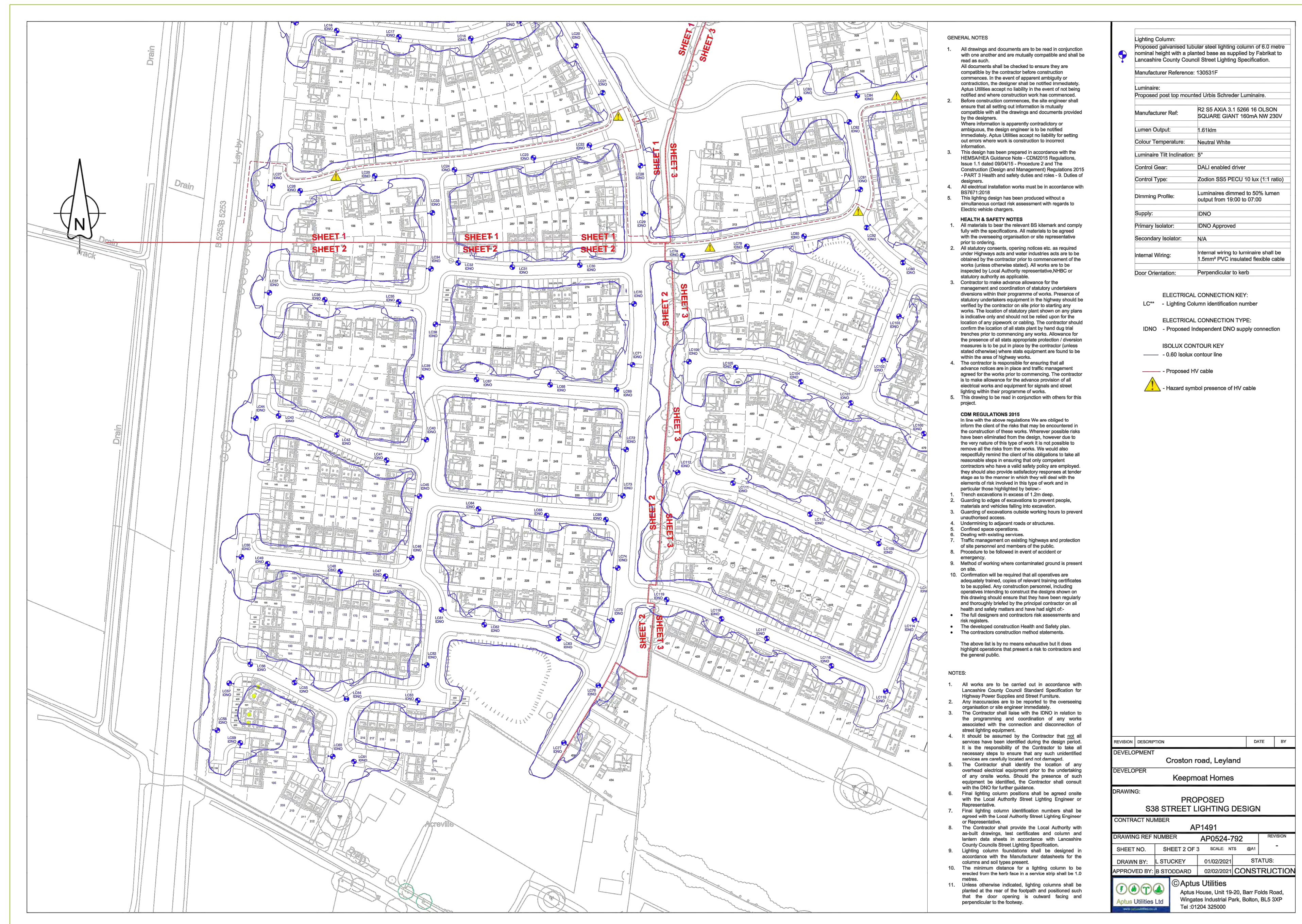
Case Study

KEEPMOAT HOMES – RE-DESIGN: PRE-CONTRACT

Client: Keepmoat

Address: Croston Road, Leyland

Site layout: Housing development



Client: Seddon

Address: Whalley's Road, Skelmersdale

Site layout: Housing development

The developer had engaged the local authority to produce a lighting design on the basis **that it came with pre-approvals** and sent this out to tender for the installation package. Aptus were awarded the **street lighting installations & connections contracts** and started to mobilise ready to start.

Upon pre-start, it was clear that the lighting design had been produced **after the new roads had been formed** and as such, no road crossings had been allowed for or installed.

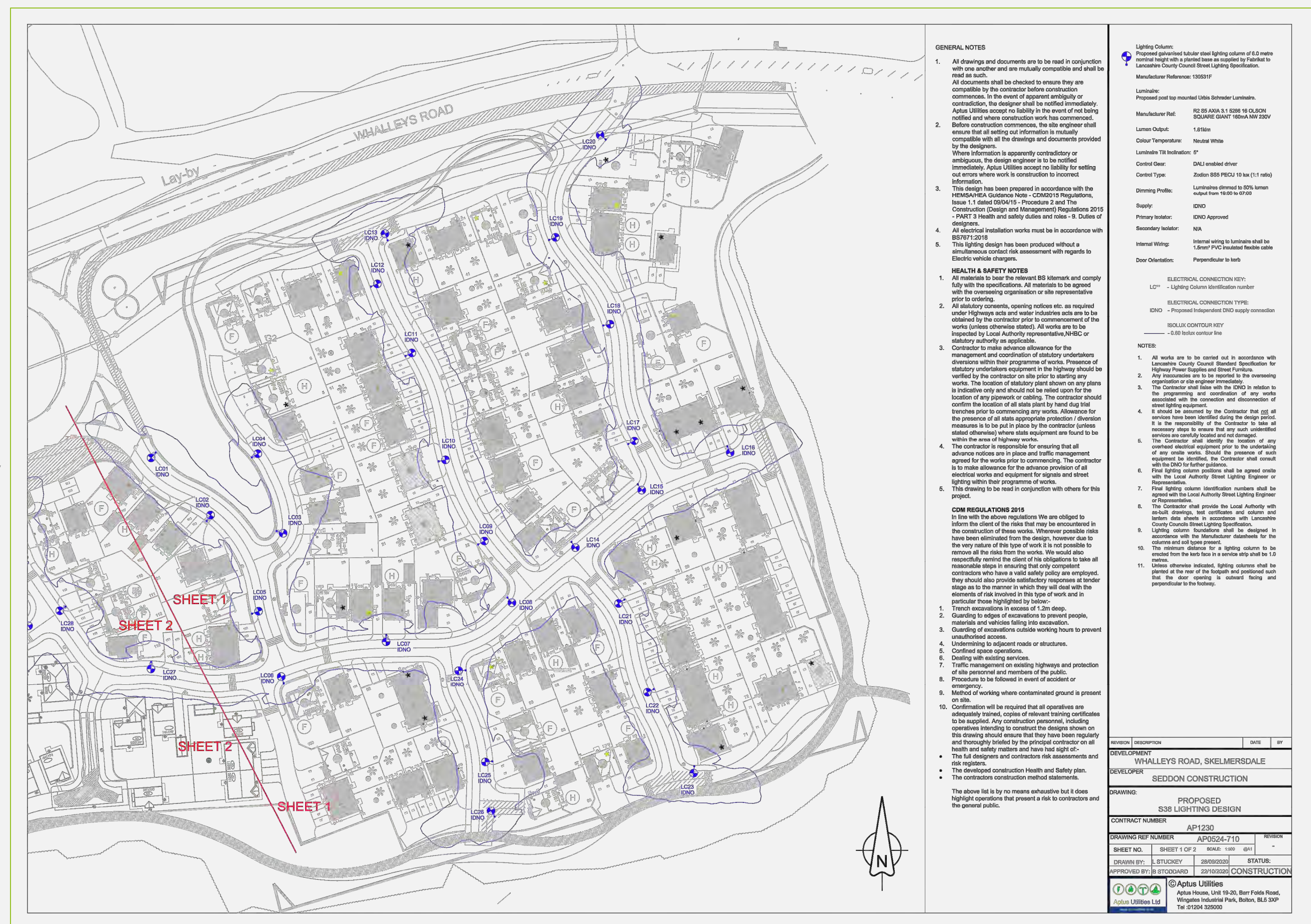
The developer asked us for a review and a redesign of the drawing to see if we could design out these issues. As we were already the multi-utility provider on the scheme, we had the advantage of knowing where the low voltage network was being installed.

The design team set to work to see what could be done and how we could quickly resolve this and offer a Local Authority approved redesign that **would not affect the site build phase and handover dates.**

Aptus **managed to achieve the target on both fronts** offering a speedy turnaround and reduced the amount of road crossings needed to be installed on site if the first proposed drawing were used.

Through re-design, **we were able to move 10 proposed columns** over to the other side of the road where the LV would be laid, without the need of any additional columns adding to the design. This lighting design was still designed to the required British standards – **BS5489:2020** and the local authority specifications.

Aptus also provided the Private Lighting design on this scheme based on the same principles as the adopted.



BLOOR HOMES - DESIGN: ECOLOGICAL CONSTRAINTS

Client: Bloor Homes Address: London Road, Holmes Chapel

Site layout: Housing development

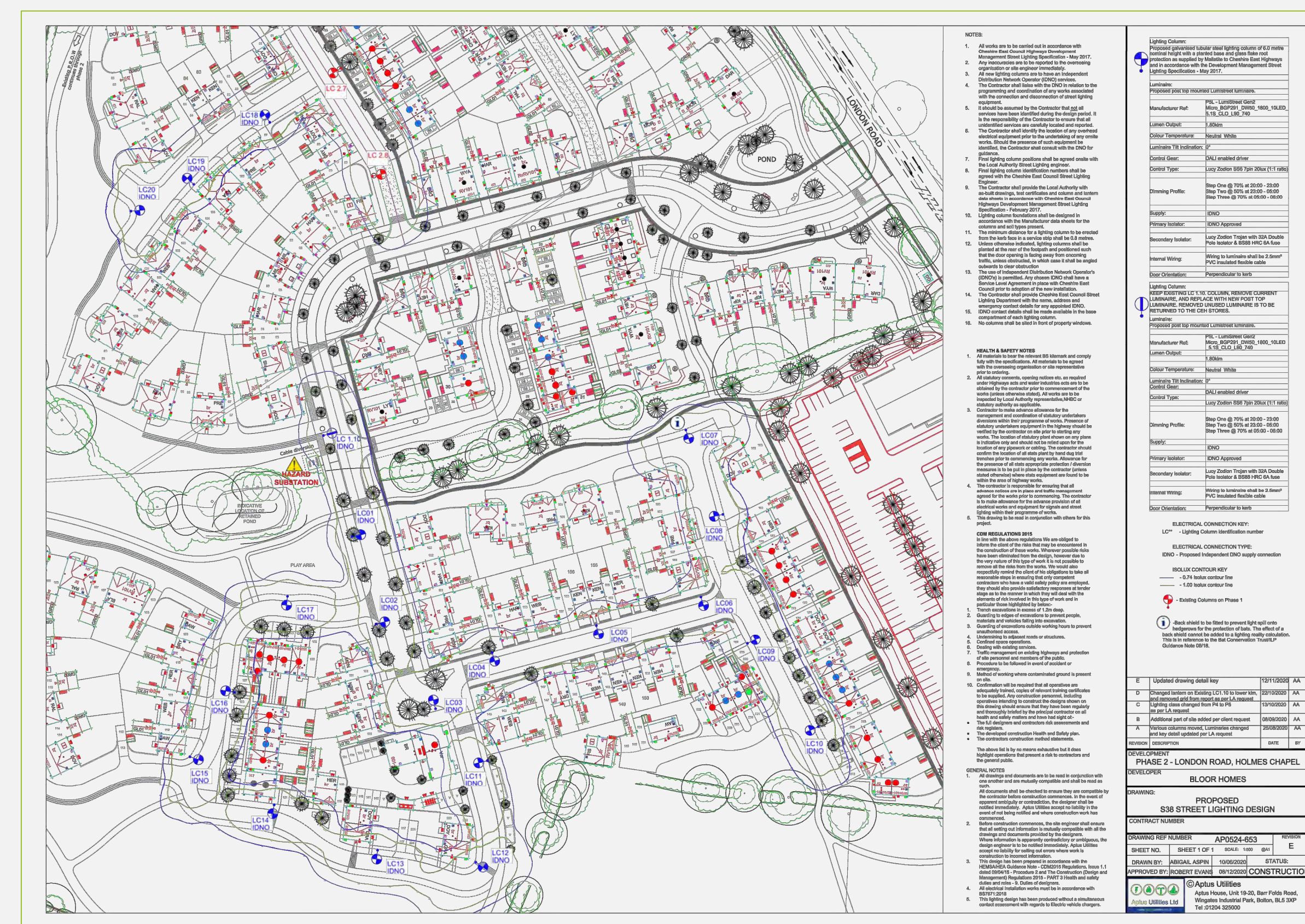
THE PROJECT

Aptus Utilities was awarded with a street lighting design sited in **Cheshire East County Council** area.

WHAT WE DID

At the beginning of the project, it was made clear that there were a few factors which needed to be considered from a lighting design perspective.

- **The existing lighting on site from Phase 1** - This needed to be incorporated **within Phase 2** to be certain that the connecting phases where meeting the standards that where expected. Phase 1 had already been installed by the Aptus Street lighting Installation team, so we were able to obtain the current lighting information. By using the Phase 1 drawing, the Aptus design team was able to make sure the connecting phases were not **over or under lit** on site.
- **Ecological constraints** – There were a number of **hedgerows and ponds** on and around the new proposed site giving an indication that wildlife, such as bats are present. This was clarified by the client and **extra precaution** was taken when design within this site. When there is a sighting or record of bats in the area, the lighting **must meet the ILP Guidance note 08/18** and be designed according to the specification. The lighting design also required a number of contour lines to show where the light spills on to the site and that it does not touch any hedgerows or trees that could cause disturbance to the bats flying paths or roosting areas.



► Case Study

THE BAXTER GROUP - DESIGN: ADDITIONS POST-CONTACT

Client: The Baxter Group

Address: Garstang Golf Club, Lancashire

Site layout: Housing development

THE PROJECT

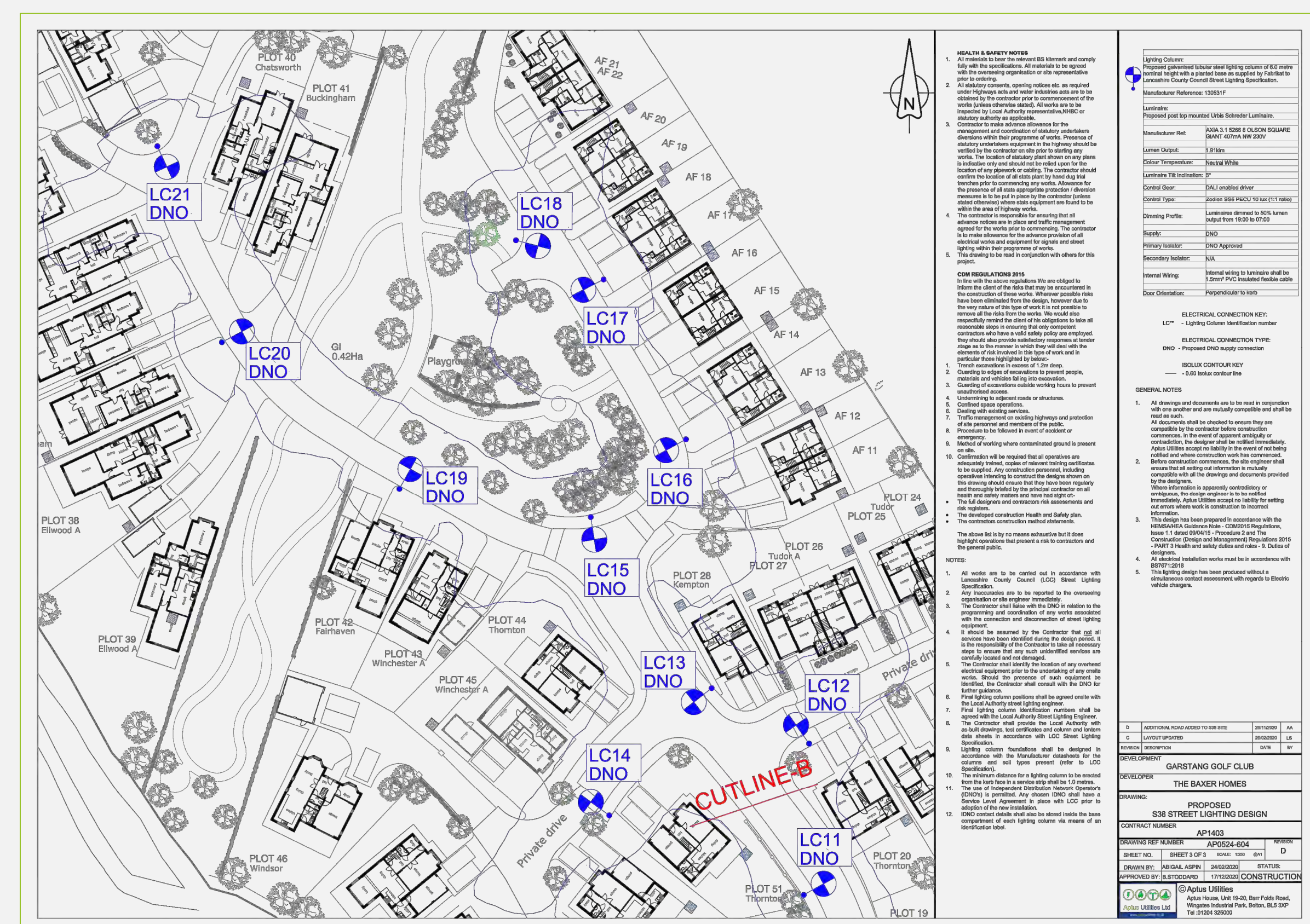
The Aptus Utilities street lighting design team was commissioned to produce **an S38 lighting design** for a housing development to the required British Standards and in conjunction to the specification of **Lancashire County Council**.

WHAT WE DID

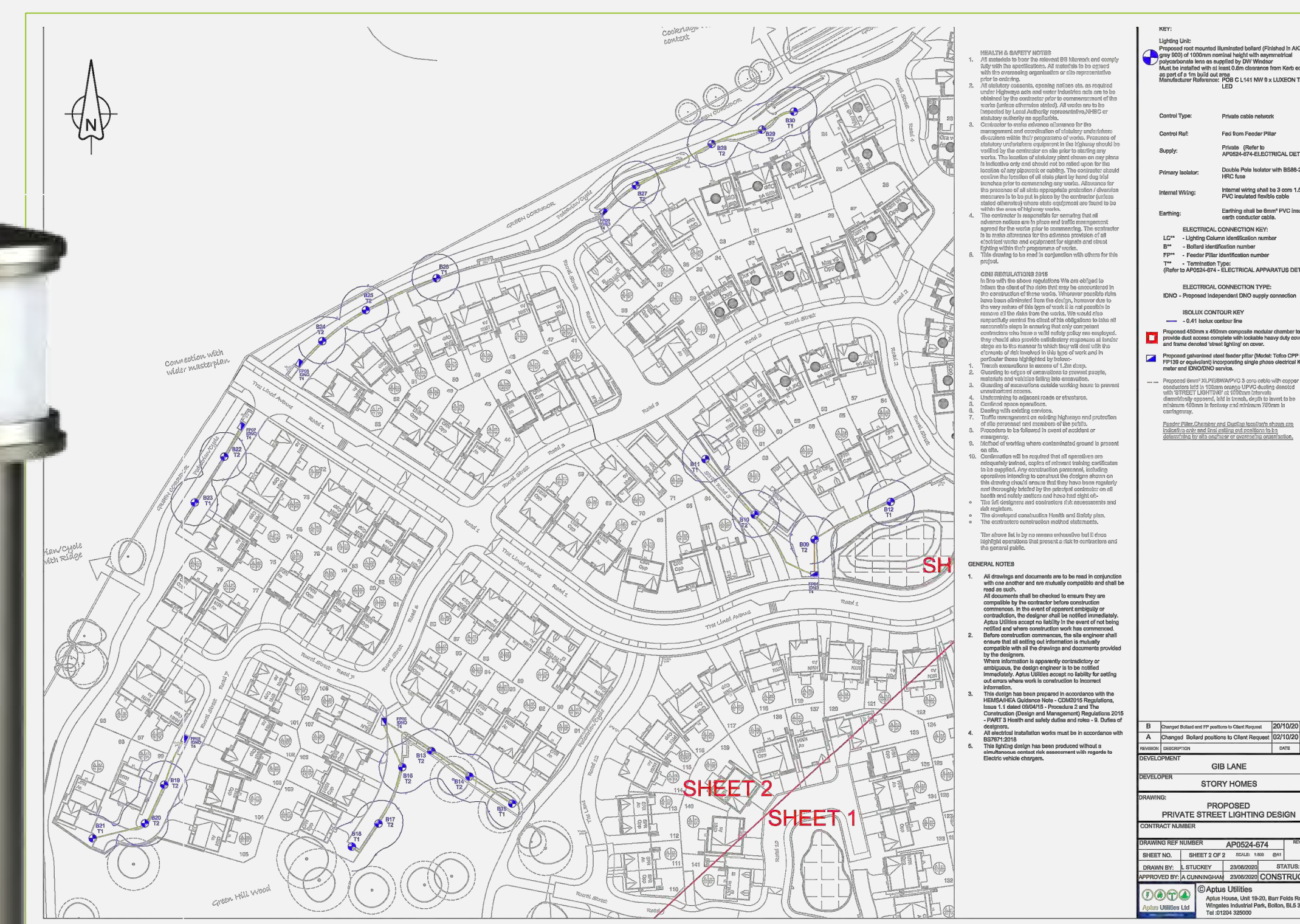
We completed the initial design within the 10-day period and sent out to the client for their review. Once all positions of columns were accepted by The Baxter Group, this was then sent out to Lancashire County Council for technical approval. Aptus Utilities dealt with **all communication** with the Local Authority.

Each S38 lighting design is **designed to the BS5489-1:2020**, and in agreement to Local Authority specification as requested. This makes any design that will be adopted in the future by the Local Authority, quick and simple as it **meets the latest requirements**.

Further down the line when construction began on site, there was a site layout change with an **additional section of road added** to the entrance of the S38. Changes were made on the street lighting design, and re-approval given from Lancashire County Council to proceed onwards. By using Aptus Utilities, for both the street lighting design and installation, the Baxter Group was **confident that all departments were up to date** with the amendments to be made without the need to communicate with multiple companies and authorities.



Site layout: Housing development



► Case Study

Eon Drive – Electric Vehicle Charging

Client: Eon Drive

Address: Chester Avenue, Clitheroe

Site layout: Housing development

THE PROJECT

Aptus Utilities were approached by E-On Drive to deliver the design and installation of 5 x 11kw Twin EV Chargers in Clitheroe on behalf of the local authority.

WHAT WE DID

Due to the load requirements, an assessment was required to determine the closest point of connection to the Low Voltage network and design a suitable installation.

The design needed to include ENWL connection works, the design and cable calculations to the EV Chargers from the mains kiosk. We also needed to factor in all risk assessments including the simultaneous contact assessments that showed that the exiting street lighting columns would need to have the earthing system changed to a TT System due to the proximity to the chargers.

With our NERS accreditation alongside our NICEIC accreditation, Aptus stood out as we have the ability to undertake the full scope of works from design through to the installation & commissioning and finally, certification and handover.

Our designers and estimators worked closely with the E-on drive team to design a system within scope and budget. From there, the installation team was able to plan the installation works and arrange the traffic management, Local Authority opening notices and car park access including the disablement of the car park bays whilst the installation was in progress. All works were undertaken during summer 2020 and completed to the satisfaction of our client.

Daniel Fairclough, Senior Quantity Surveyor, E-On Drive said:

“Aptus Utilities provided us with a complete professional turnkey service, from the initial LV design works, Point of Connection arrangements through to installation and site handover.

Adrian and the team were a pleasure to work with and kept us fully updated throughout the works. Our client is extremely happy with the installation that now provides the town with sufficient charging points for both local residents and visitors and appreciates that this installation was carried out during an extremely challenging time (COVID-19).

We would have no hesitation in using Aptus Utilities on future projects”

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Eon Drive – Electric Vehicle Charging

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