CABLE DIVERSIONS CASE STUDY

At the A14 it was recognised that control over cable diversions was a high priority for the Utilities Co-ordinator and his team. To improve on how work has been traditionally controlled with Permits the following system has been adopted:

- Permits are issued with accompanying services drawings with date and time frame clearly indicated
- Drawings are linked to grid references
- QR codes are used so that a PDF version of the drawing can be downloaded on to a phone/tablet
- When a cable diversion has been completed the Permit is returned to the Utilities Co-ordinator **BUT the Permit is kept open until the site drawings are updated** – this prevents any further works from being started in this area
- Site drawings are updated weekly and are clearly marked with a date for the next update if works are continuing
- The model used for the drawings incorporates:
  - Buried existing services
    - PAS-128-Quality D – original service's owners record (each owner provides their records in different format and shape), the lowest quality of information
    - PAS-128-Quality C – survey of a visual sign of a service – street furniture, scars on the tarmac, chambers, etc.
    - PAS-128-Quality B4-B1 – detection – ground penetration radar (GPR/EML), CAT + Genny
    - PAS-128-Quality A – survey of exposed service, the highest quality of information
    - Local knowledge – information passed on to us by the land owners regarding private supplies, old abandoned services, etc.
  - Overhead existing services:
    - PAS-128 qualities do not apply to overhead services
    - Original SU's records
    - Survey from site
  - Newly installed services – buried + overheads (supplies to compounds, CCTV ducts, diversions, etc.)
    - The actual survey from site done by one of the surveyors and passed on to me. High accuracy.
- Trial holes references shown – the trial holes information (date it was done, what was found, what colour, size, at what depth and photos) can then be easily found on GIS portal which is accessible for everyone via web browser. Link to GIS can be found in my weekly updates.

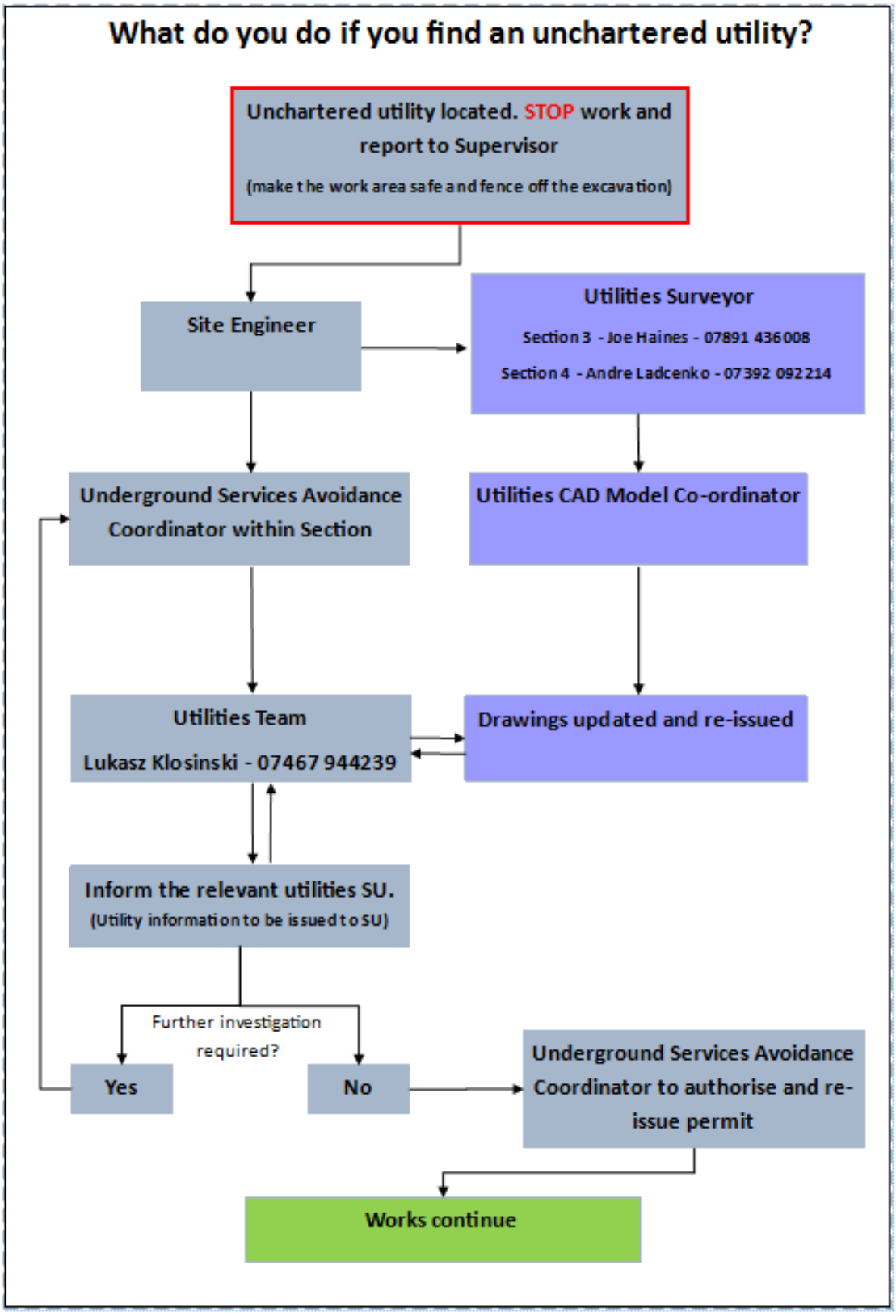
- Process map for uncharted services – this was created in phase 1 and is about to be revisited but the main idea remains the same
- Weekly email update:
  - You can find here links to:

- Updated existing utility model in 2D in local grid – used by site team, designers
- Updated existing utility model in 3D in national grid – used by services owners
- Updated trial holes survey mode in 3D in local grid - used by site team, designers
- Updated trial holes survey mode in 3D in national grid - used by services owners
- Updated sets of Permit to Dig drawings for each section
- Link to GIS portal with the trail holes information
- Report on what had been sent to me with the details, comments and outstanding actions
- All the above information is sent to stakeholders:
    - Site team – permit to dig coordinators, engineers, service coordinators
    - Designers – they are using this to update the lines of proposed diversion
    - Service owners – they using it for producing C4 estimates and are aware of our finding on site

Our desired system and other improvements currently being worked on includes:

- Production of 3D modelling of all existing utilities which will be updated throughout the project. This will be used amongst other thing for bespoke clash detection exercises.
- Uncharted services schedule linked to above models.
- Smart Permit to Dig system with live information as a next step of managing the existing utilities and communicating the information to site. This will not only allow the site team to have access to live information but will also allow the team to enforce virtual exclusion zones and comments on the model which then will be displayed on their permit to dig drawings.

Process Map for Unchartered Services



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