

Best Practice in Avoiding Underground Services

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| Responsibilities Process Map | | | | | |
|  | Action | Client  (as defined by CDM) | Designer / Planner  (as defined by CDM) | Contractor  (as defined by CDM) | References |
|  | Eliminate, substitute or reduce risk in design  Designers demonstrably competent in underground services aspects  Encourage Supply Chain to sign up to USAG Charter  Tender submissions include management of underground services  Location of services included in scope and price  Follow change management process  Understand responsibilities for co-ordination and management of underground services information  Defined change management process  Ensure clear understanding of communication internally and with Clients, Designer, Planners and Contractors  Defined communication inc. Designers and Supply Chain  Define requirements for management of work near underground services  Ensure clarity of known areas of service interaction  Clearly scope works |  |  |  | BPAUS 05 – Training Framework for Designers and Planners  <http://www.hse.gov.uk/construction/cdm/designers.htm>  <http://www.hse.gov.uk/construction/cdm/designers.htm>  BPAUS 04 – Client Designer and contractor opportunities, responsibilities & checklists  <http://www.hse.gov.uk/construction/cdm/acop.htm>  BPAUS 04 – Client Designer and contractor opportunities, responsibilities & checklists |

Isolation

Review or check

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|  | **HOLD POINT**  Contact Asset Owner at concept stage to identify the possibility of diversion or isolation of services  Designated Service Information Co-ordinator identified and included in design reviews  Service Information Co-ordinator appointed for each project  Effective information communication process (inc. BIM protocols) for right information to right people at the right time  Obtain all relevant and available underground services information (in conjunction with Designers)  Allow sufficient time and resources for positive service location  Do Not accept services information more than 3 months old  Define minimum acceptable standards for service information provision inc. colour and cross sections  Establish a clear understanding of communication process with Asset Owners  Establish clear communication with Asset Owners for contact, help and advice, inc. local knowledge |  |  |  | <http://www.nationalgrid.com>  <http://www.ukpowernetworks.co.uk>  <http://www.bimtaskgroup.org>  <http://www.energynetworks.org> |

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|  | Clearly defined communication routes to Designers, Planners, Clients and Asset Owners for communication information, advice and support  Clearly defined and communicated roles and responsibilities for management of underground services risks  Clear and robust change management process is understood  Ensure the provided information is complete  **HOLD POINT**  Handover of information with opportunity for review and explanation  Clear communication processes in use to communicate appropriate and sufficient information to Contractors  BIM used to capture and share information, identify service clashes and potential diversions  Design takes into account “Protection Zones” for working in proximity of services which cannot be avoided  Demonstrate that routings, diversions, pre start removal, isolations and sequencing have been considered  Review design to verify that all reasonable measures have been taken to avoid service locations  Document and track all contacts with Asset Owners |  |  |  | BPAUS 04 – Client Designer and Contractor Opportunities, Responsibilities and Checklists  <http://www.bimtaskgroup.org>  BPAUS 07 – Proximity Zones for Mechanical Equipment  CIRIA Report 662 |

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|  | Challenge the design where expectations of elimination, substitution or reduction of risk by design falls short of Contractor’s expectation  Change management process understood and applied to changes in design, site conditions and sequencing etc.  Communication and effective working relationship established with Underground Services Co-ordinator  Allow sufficient time and resources for positive service location throughout Supply Chain  Encourage Supply Chain to sign up to USAG Charter and the elements subjected to monitoring and audit  Competence of Supply Chain in relation to management of risks associated with underground services including personal competence of workforce  Adequate resources for management of risks associated with underground services is included in tender  Integration with Designers to assist in risk elimination |  |  |  | <http://www.utilitystrikeavoidancegroup.org> |

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|  | Confirmation that any agreed isolations have been carried out  Confirmation that all services requiring diversion have been diverted and there are no residual risks (pot ends etc.)  **HOLD POINT**  Issue and Brief Permit  **HOLD POINT**  Comply with any other working restrictions identified by the Asset Owner  Changes which may affect or could be mitigated by design to be referred to the Designer  Where any service is encased / surrounded in concrete, work is to STOP until a safe system of work is identified  Follow safe systems of work  Workforce understand that if they are in any doubt that a service is live, or that safe working practices are not taking place they must STOP and obtain instruction  Positive identification of all underground services which could potentially be disturbed  **COMMENCE WORK AROUND UNDERGROUND SERVICE** |  |  |  | HSG47 – Avoiding Danger from Underground Services  BPAUS 08/09 – Services Encased / Surrounded in Concrete  <http://www.national-1-call.co.uk>  <http://www.linesearch.org>  BPAUS 02 – Design and Planning Process to Avoid Underground Services  BPAUS 06 – Permits Use and Content |

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