

Underground Utility Tracing

ND Oliver & Co Ltd





some facts



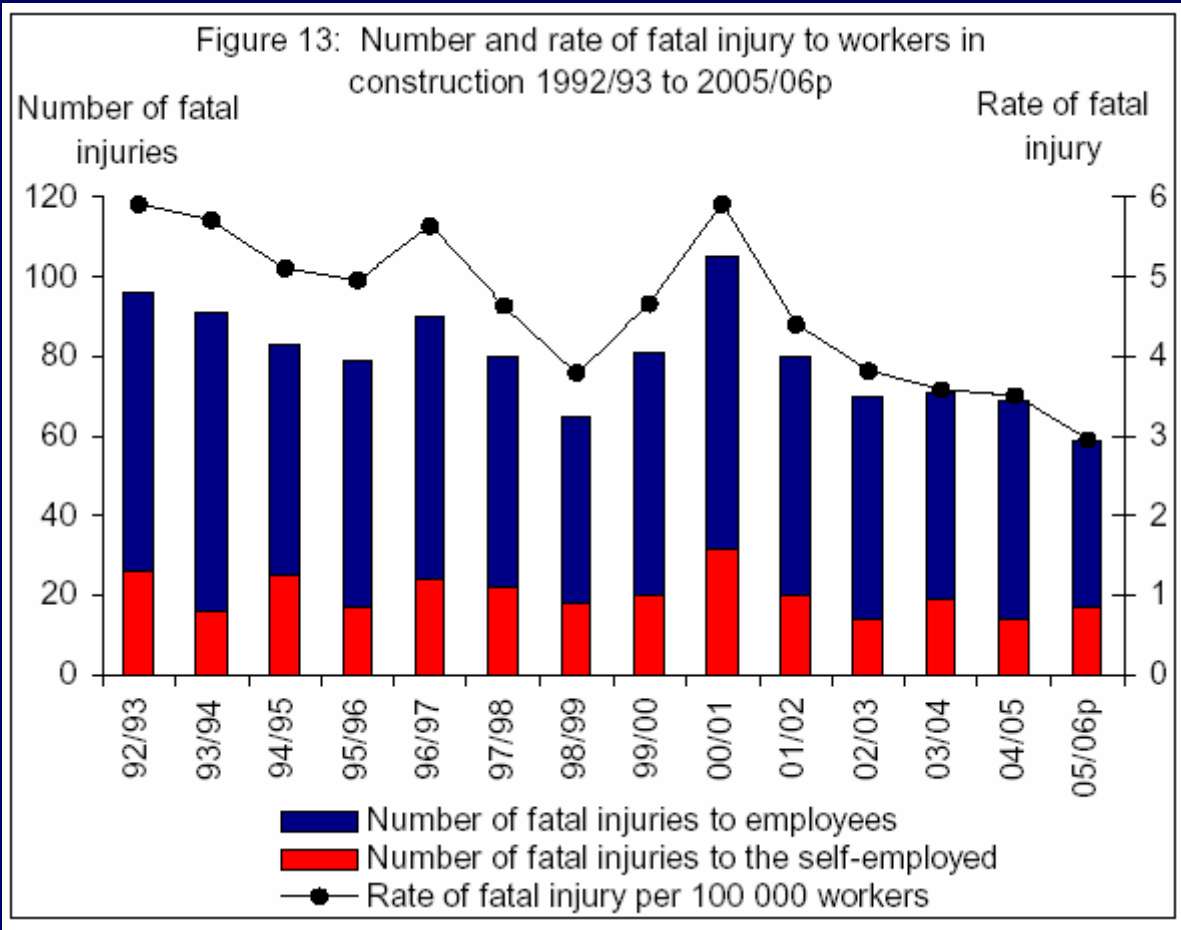
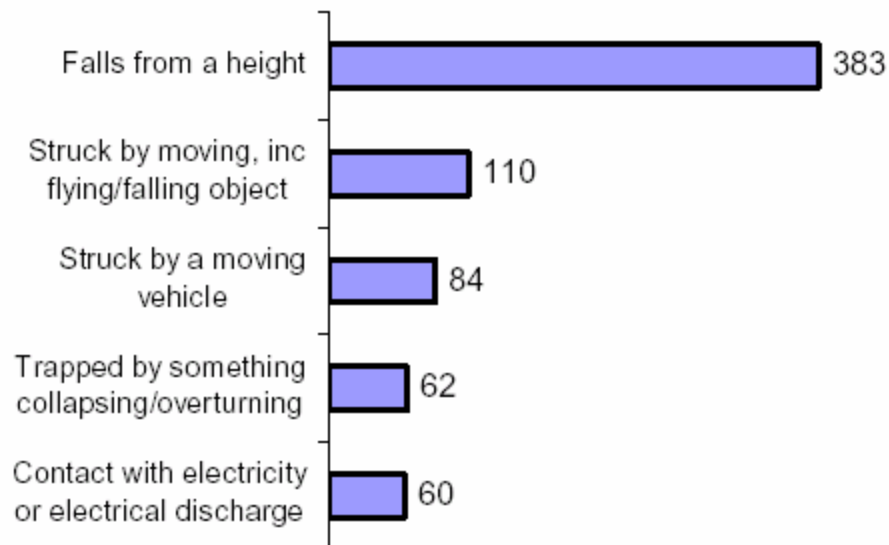


Figure 14: Number of fatal injuries to workers in construction by kind of accident from 1996/97 to 2005/06p combined

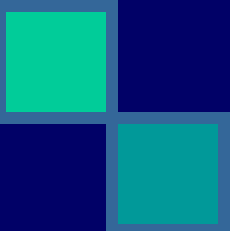



Accidents – underground cable (unintentional contact)

	Fatality	Major injury
1996–97	1	37
1997–98	2	33
1998–99	1	39
1999–2000	1	36
2000–01	-	27

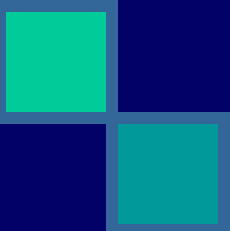



some legislation

- 
- “where reasonably practicable”
 - “suitable and sufficient steps”
 - “risks should be properly managed by actions during the design, planning and execution phases of the project”
- 




the business case for safety

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- today's manageable risk may be a threat to the existence of a business in the future
 - aim for no realistic likelihood of a serious accident
 - innovate to design and engineer the hazards out of the construction process
- 



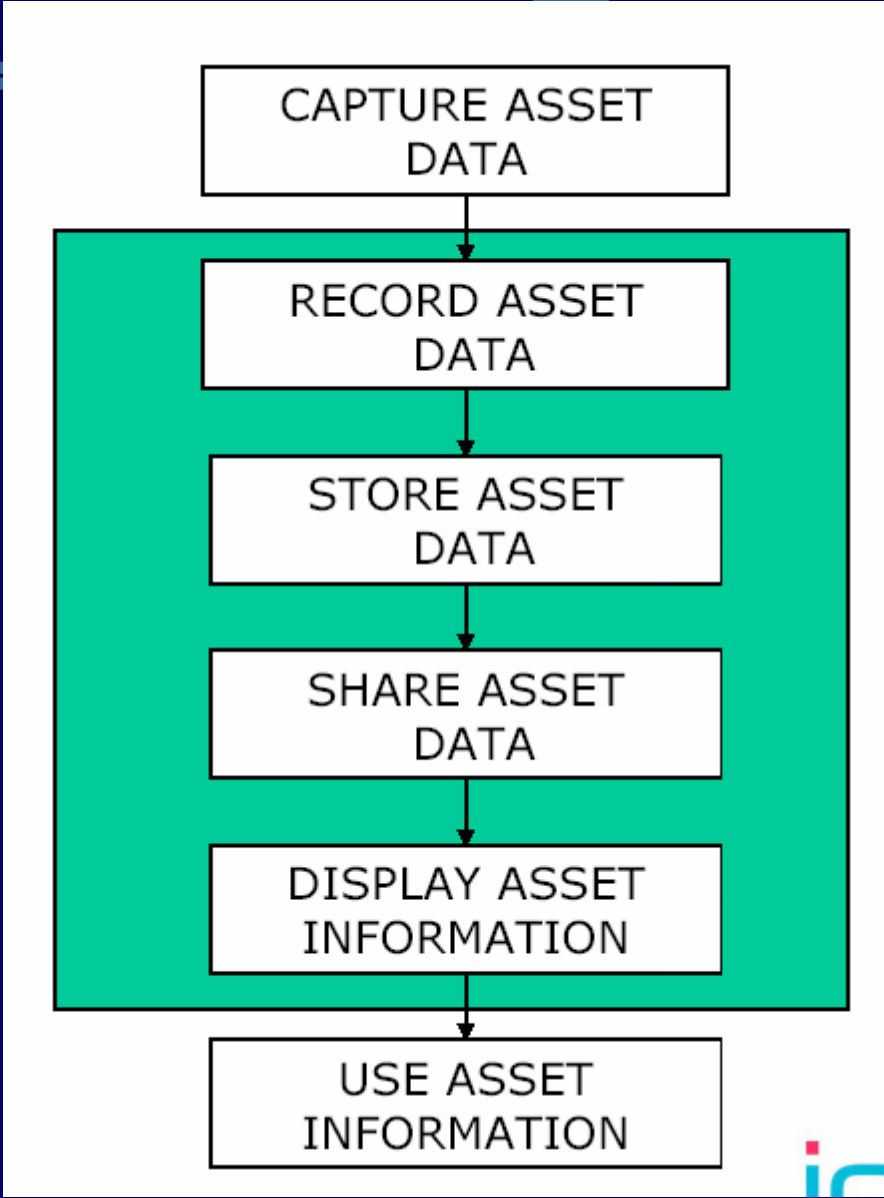
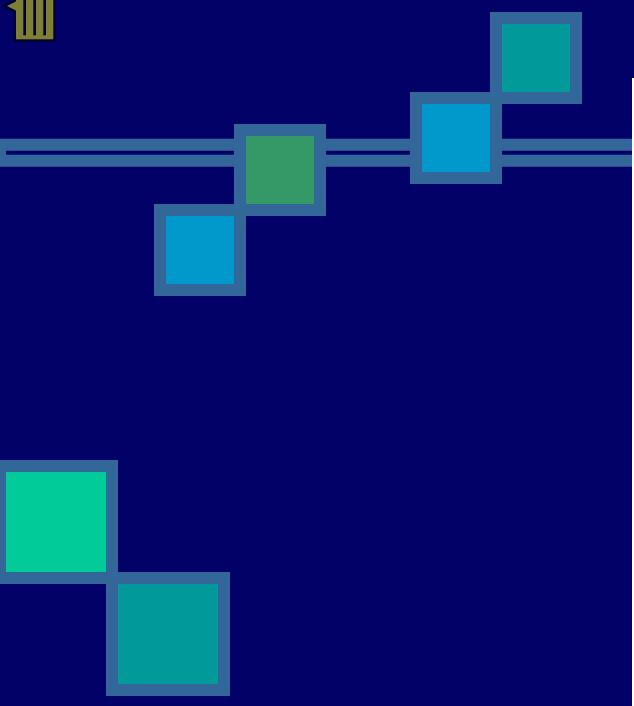
Underground Utility Tracing

- the sector is expanding rapidly
 - variations in equipment, quality and price
 - hard to assess level of service required
 - not realistic to do it in-house
 - increasing use of specialist partners to provide a one-stop shop service
- 




so why are we here ?

- ND Oliver & Co Ltd
 - Chartered Land Surveyors
 - Norman Oliver Managing Director
 - Kevin Hainsworth Business Development Manager
- 





Underground Utility Tracing

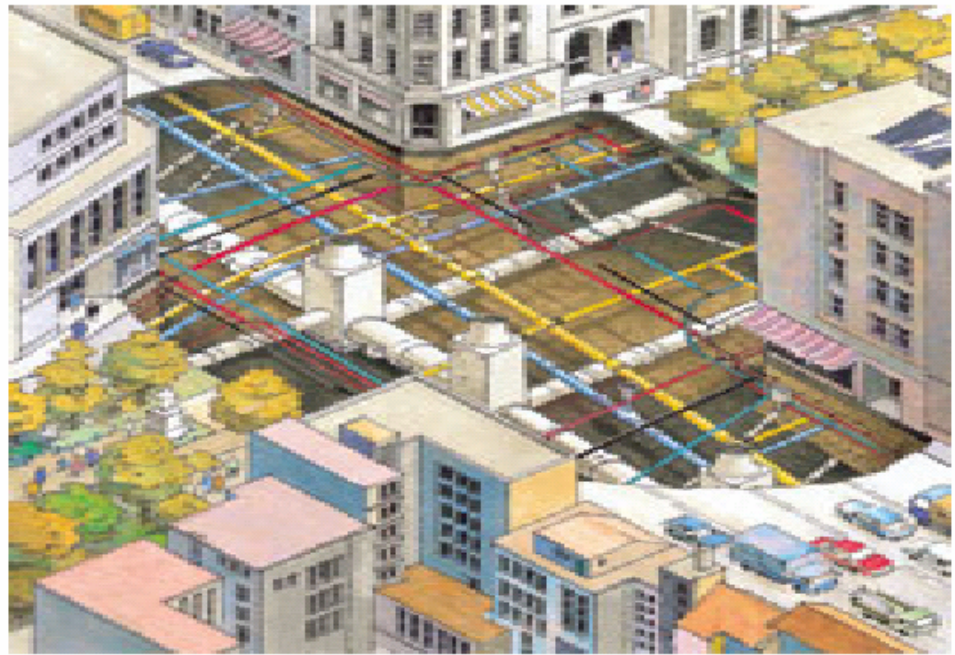
- typical workflow
 - existing records
 - underground utility tracing
 - trial holes
- 

twenty years ago



today

Communications
Gas
Oil/Petroleum
Sewerage
Road drainage
Power
Steam
Water
District heating
Street lighting
Traffic control



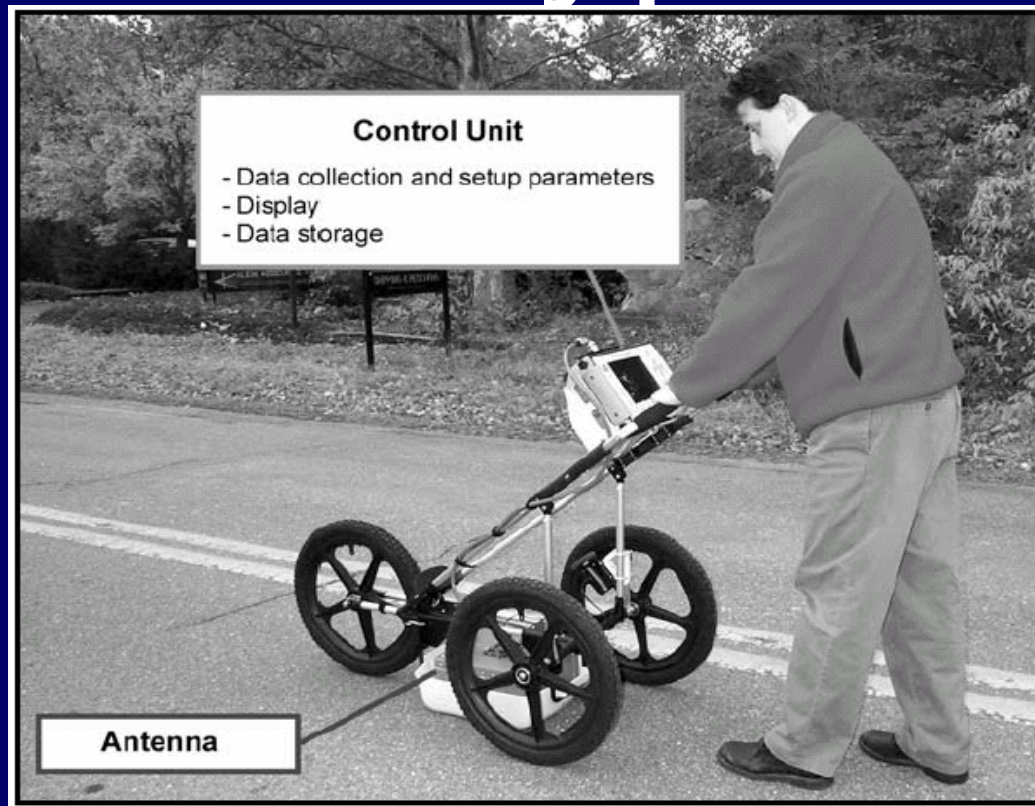
today...



GPR




“...reasonably practicable”






when ?

- tender
 - design
 - before construction
 - during construction
 - after construction
- 



what ?

- search of existing utility records
 - underground utility tracing
 - mark up
 - mark up and recording
 - re-marking of previous mark up
 - disconnection management
 - trial holes
- 



who ?


- ND Oliver & Co Ltd
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- 

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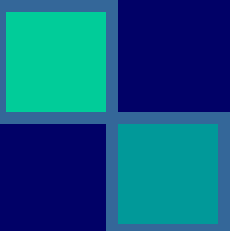



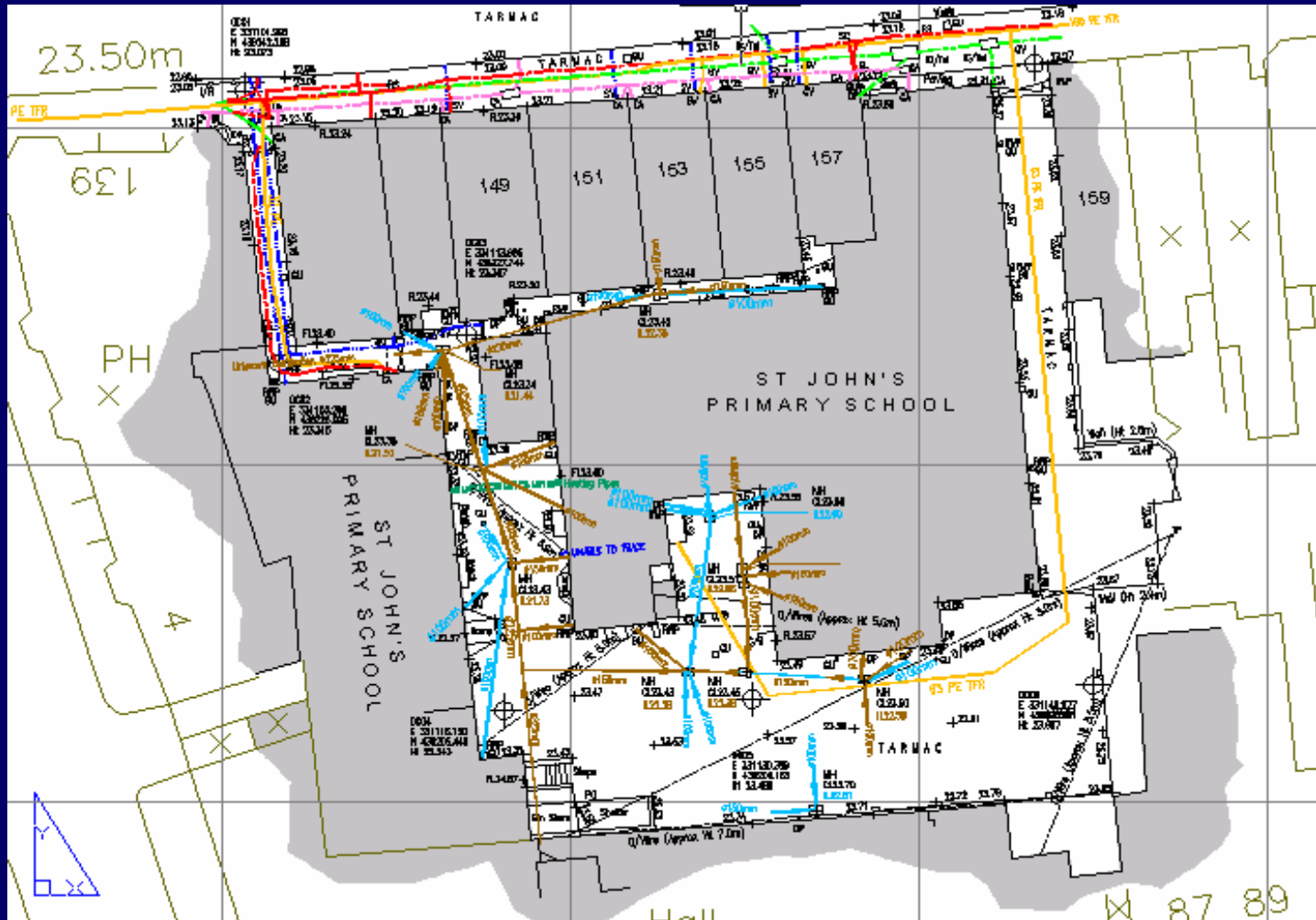
what else...?

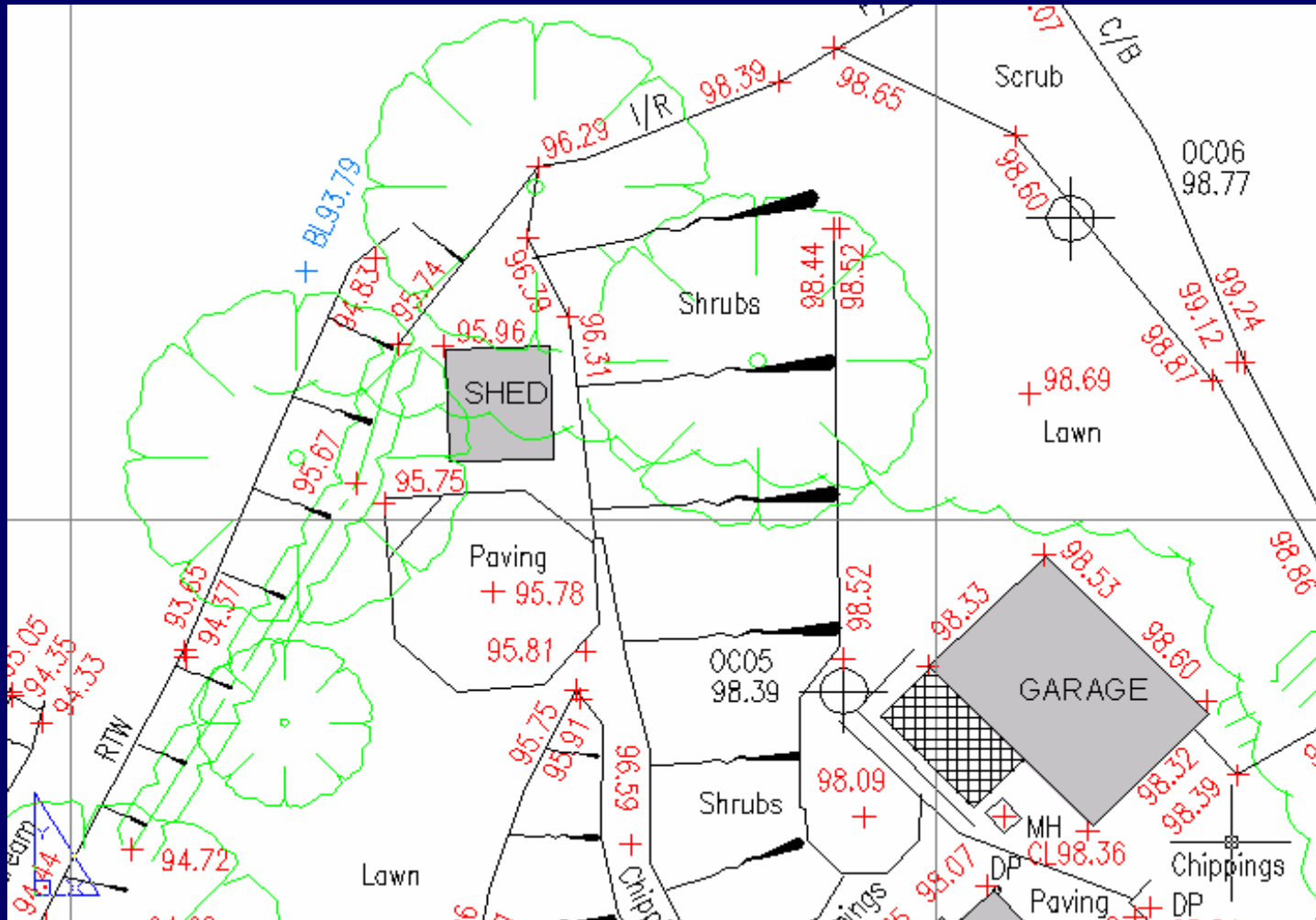
- topographic site survey
 - site control
 - volume surveys & computation
 - structural monitoring and deformation surveys
 - setting out
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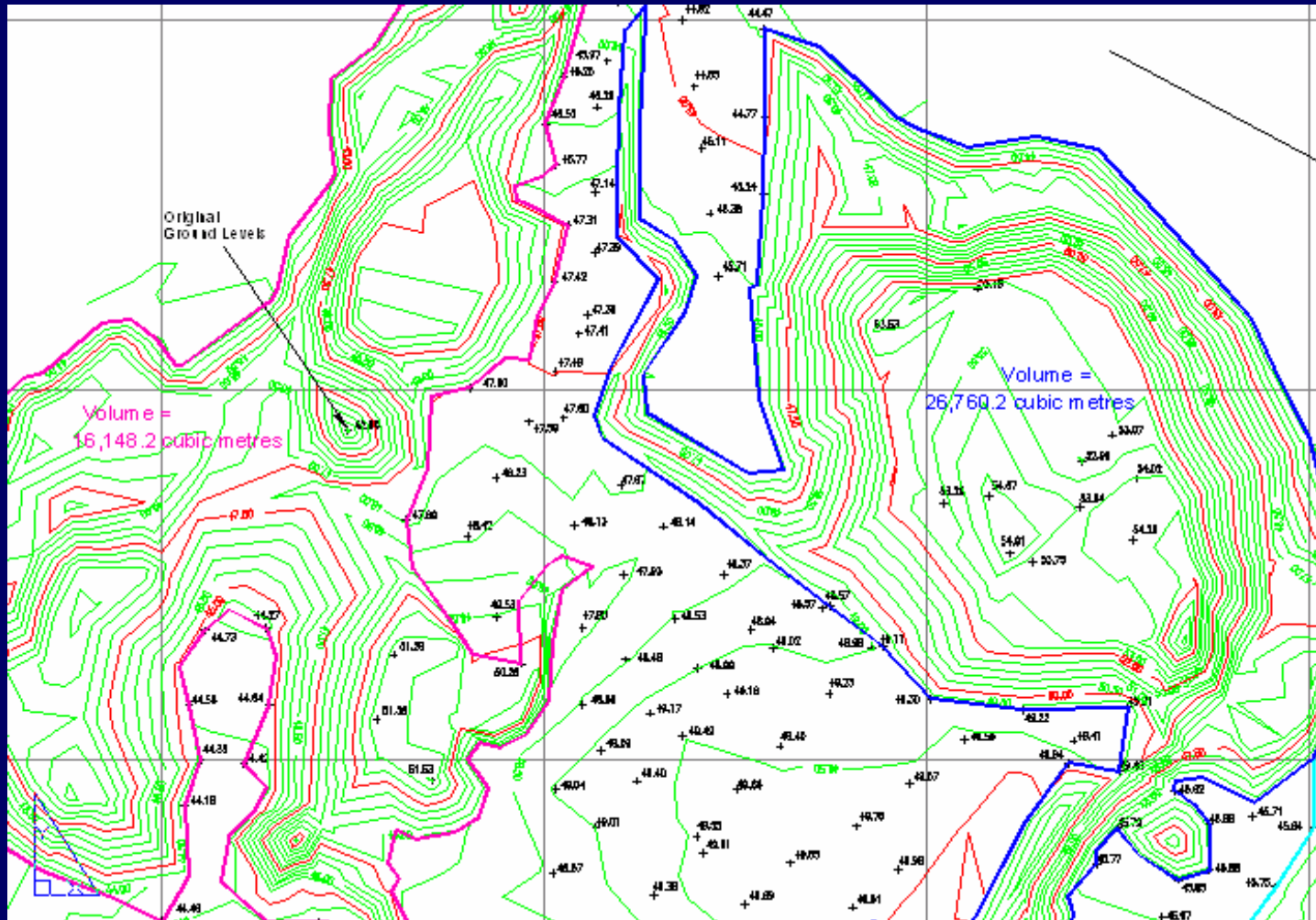


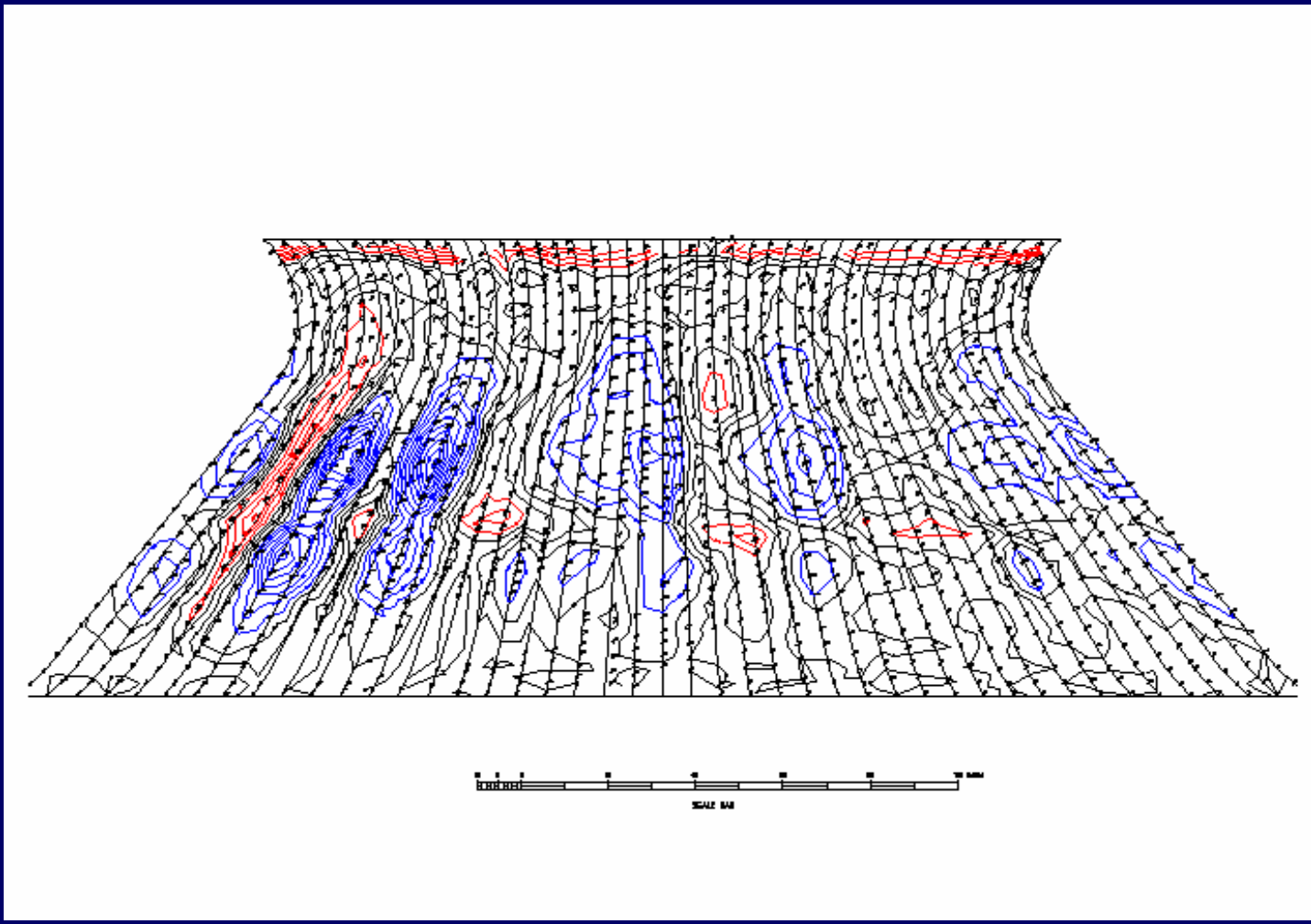
what else ?

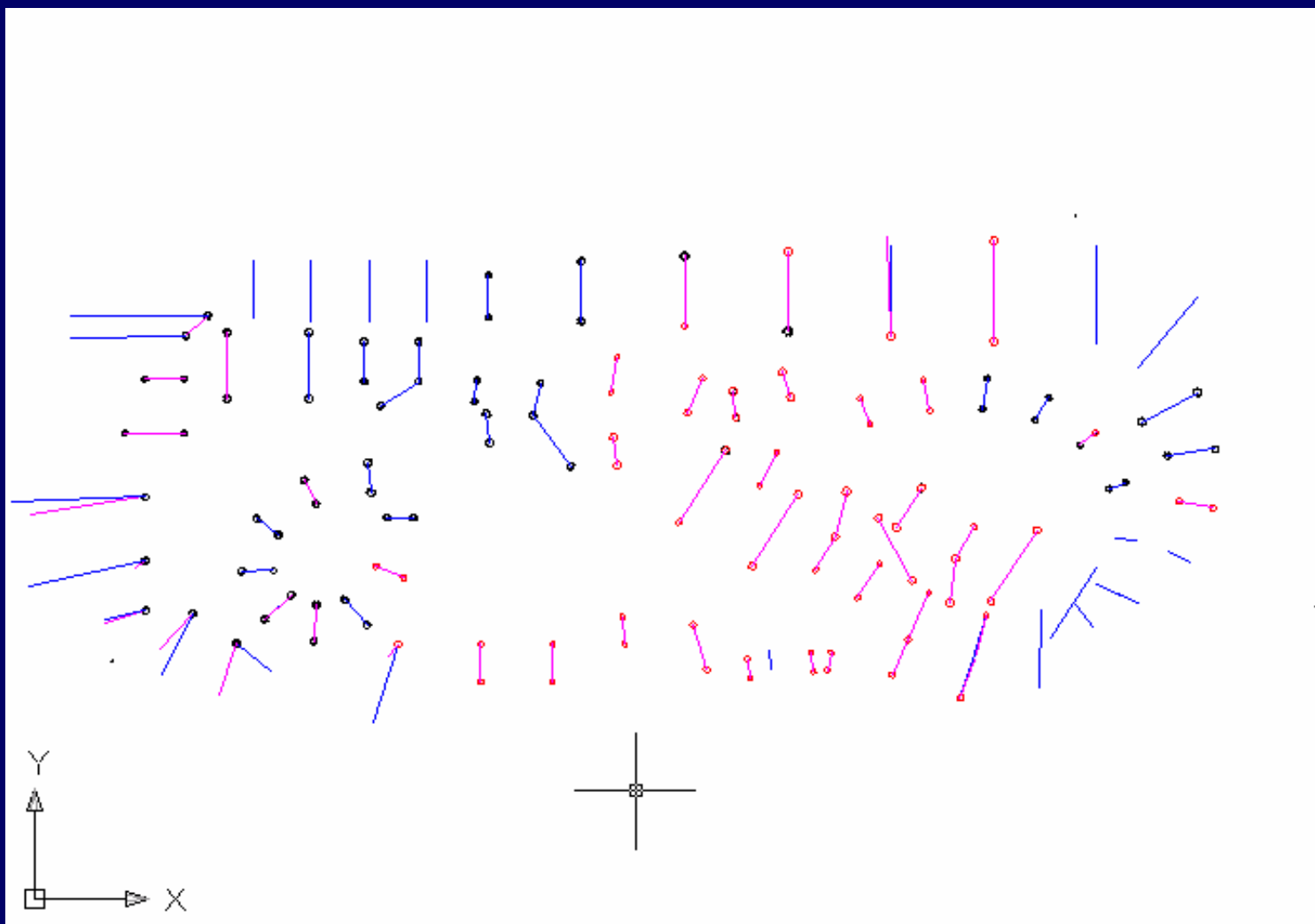
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- measured building surveys
 - elevation/façade surveys
 - scanned surveys
 - overhead line surveys
 - 3d Visualization surveys
 - void and anomaly surveys
 - GPS National Grid coordinates
- 



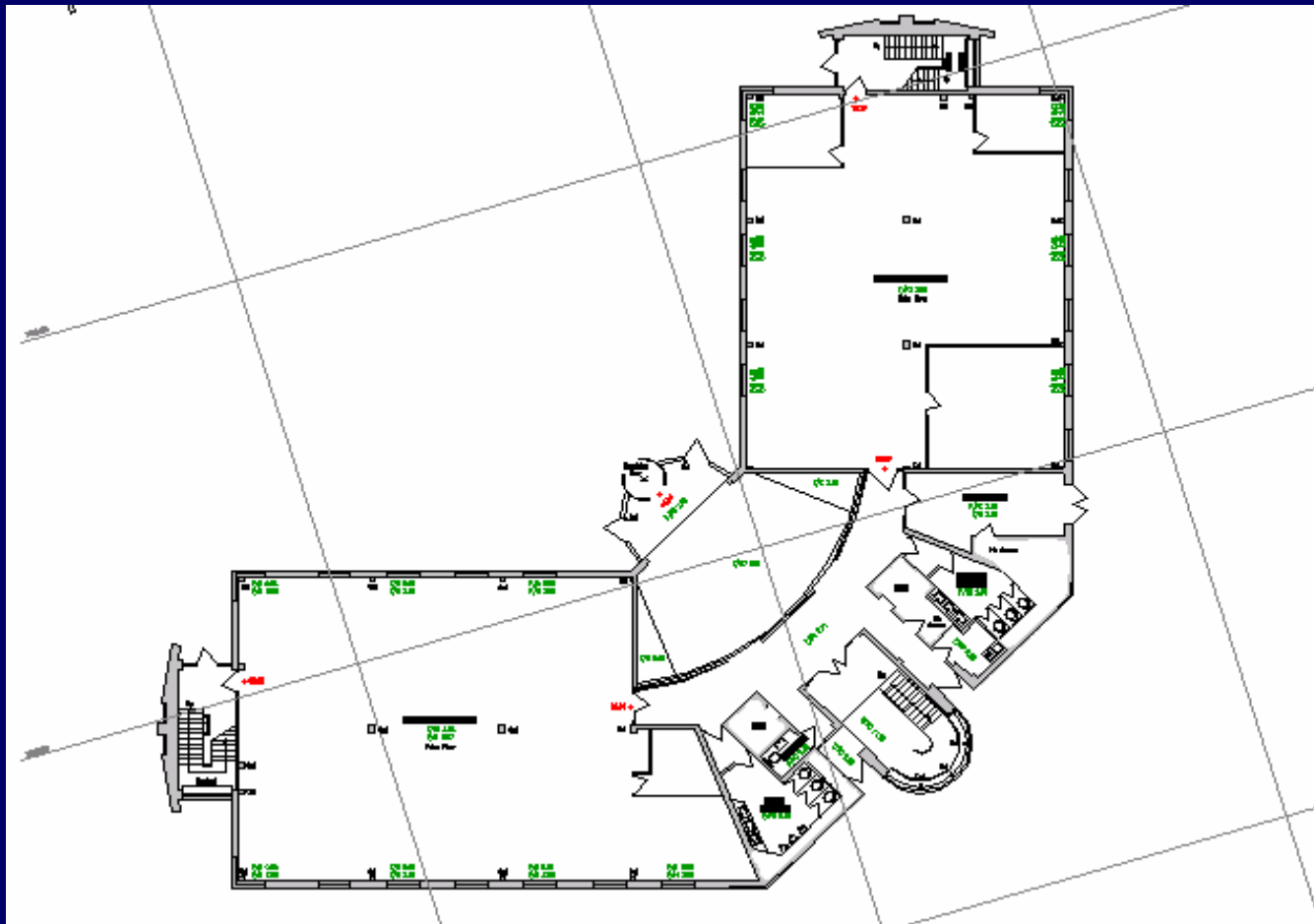


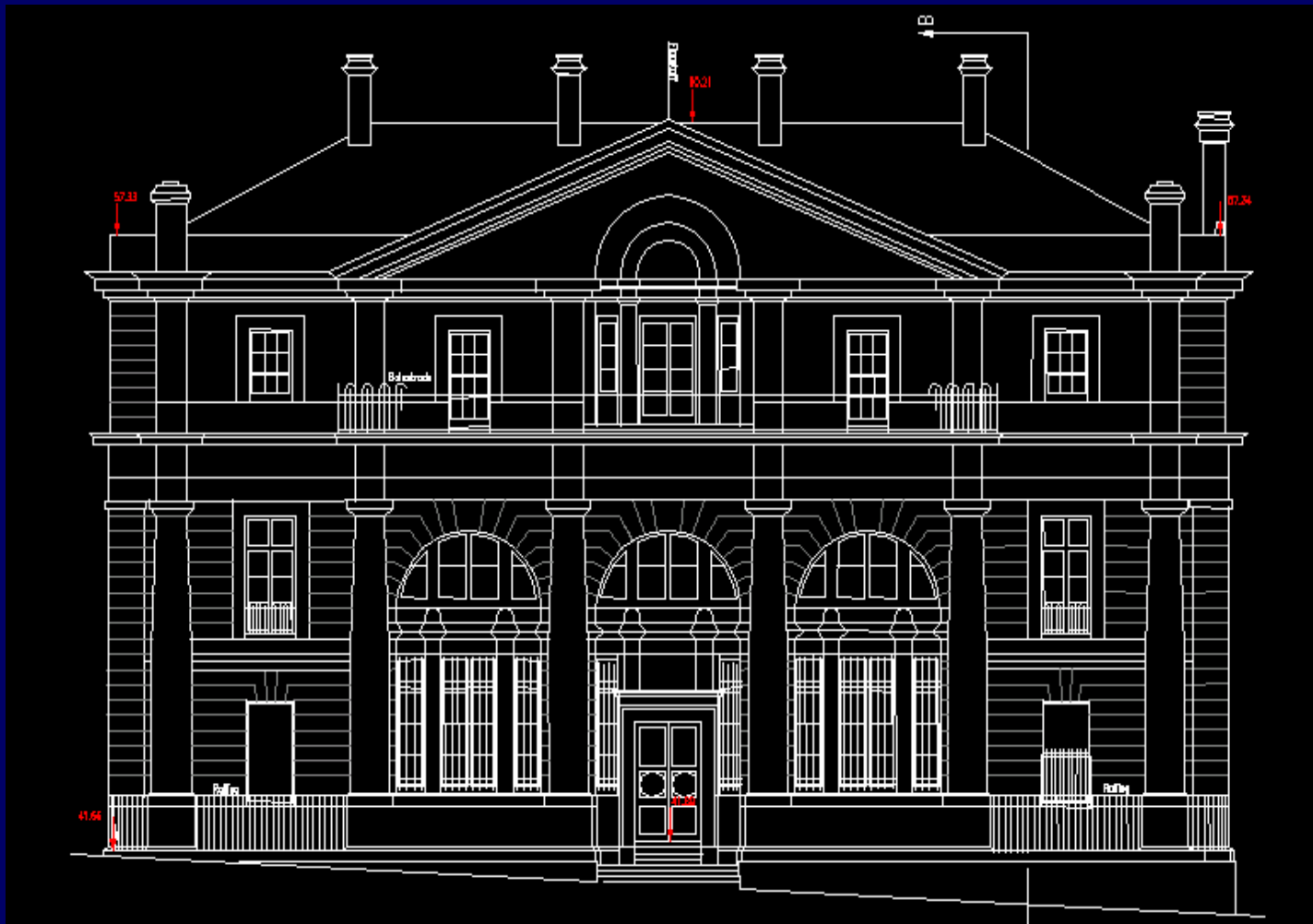


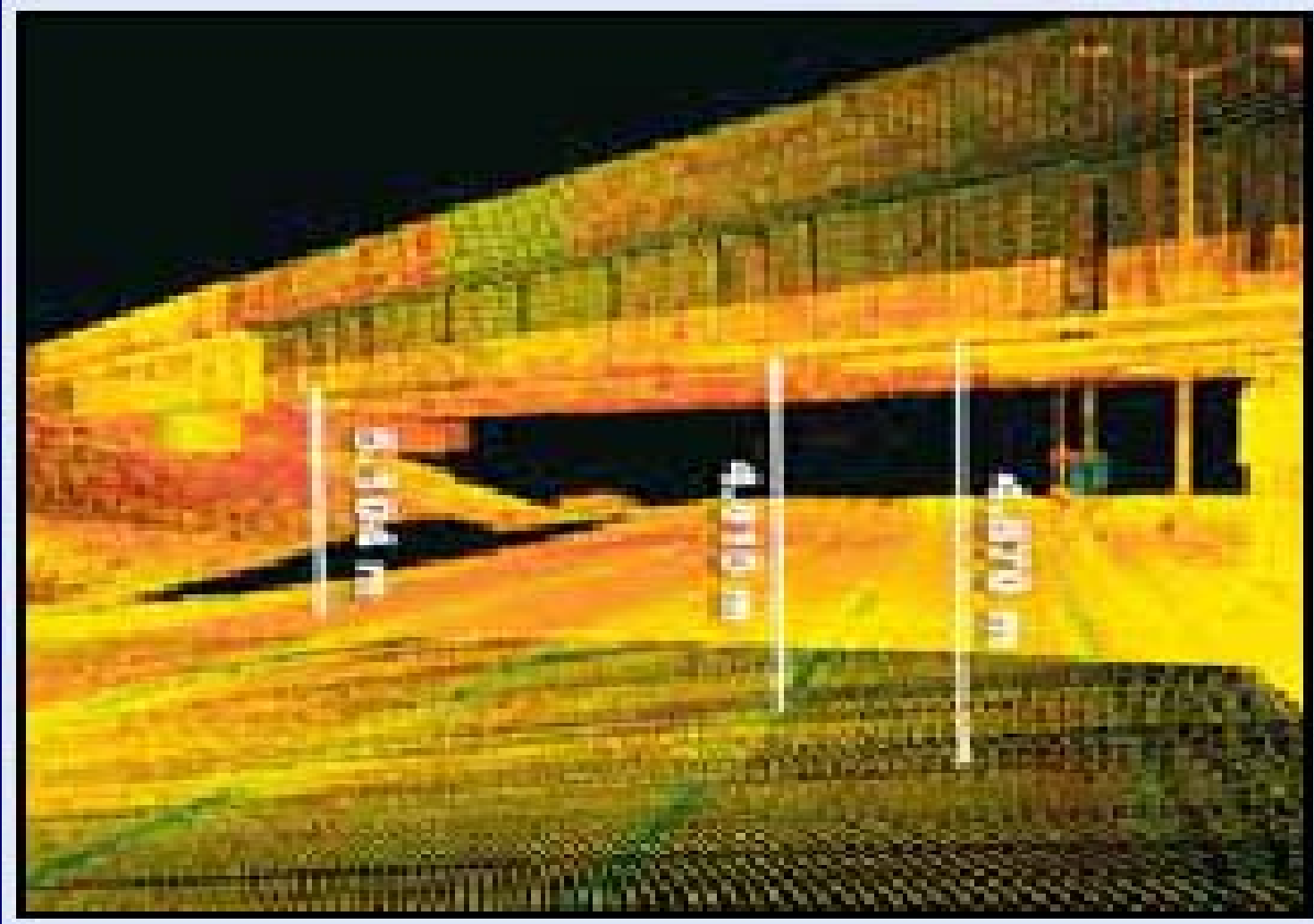






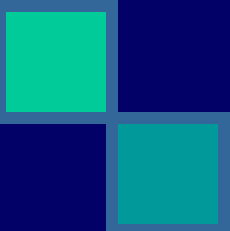








Recommendations

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- improve safety, reduce risk and delays by Underground Utility Tracing
 - use a specialist partner such as ND Oliver & Co Ltd who use the appropriate technology
 - take advantage of what other services such a partner can offer
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