

On-Site Management by Site Engineers

**Using tablet & electronic
transfer of information**

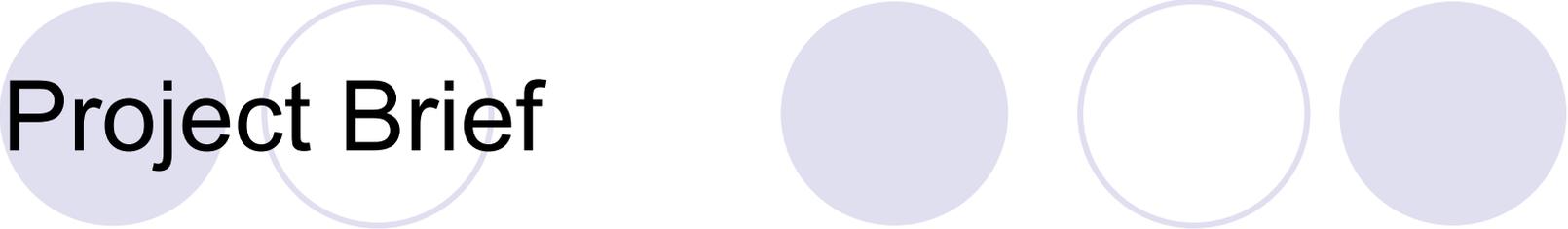
Project Report



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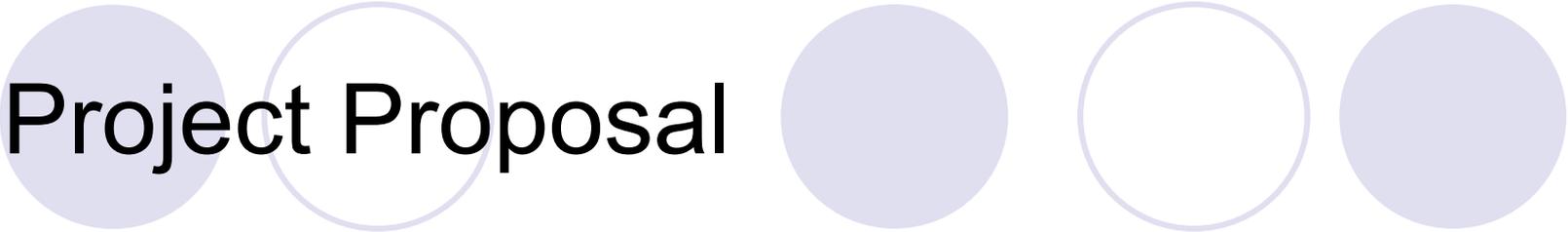
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1. Project Brief

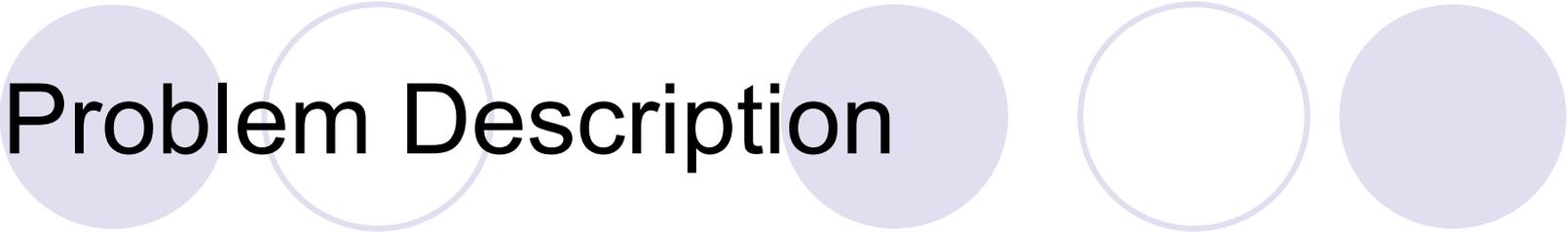
- The purpose of this project is to identify a construction related situation where current or future advances in information technology can be applied to the construction process in a positive and productive manner.

2. Project Proposal

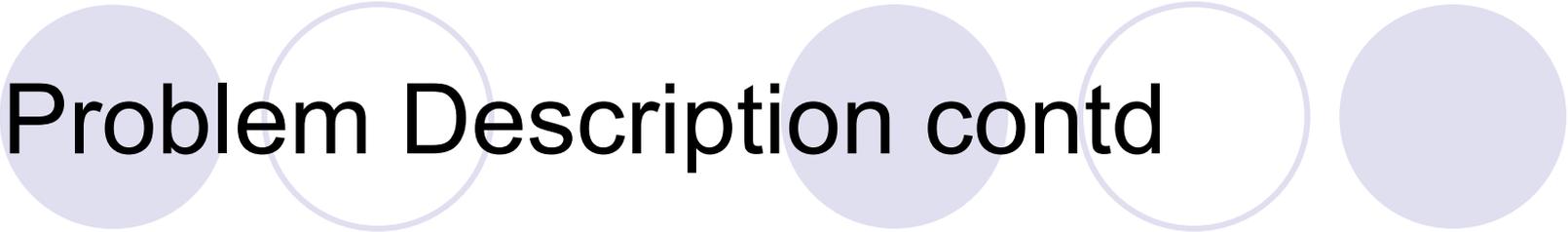


- The project chosen is to look at and propose information communication technology systems that can be used on site by engineers, who perform tasks such as setting out, supervision of work, quality control checks, health and safety checks, progress reports, sign off of completed work, etc. Communication with the architect, structural engineer and client can also be incorporated. It is felt that the use of a tablet, with relevant applications, and the electronic transfer of data using RSS Feed/News Feed and Google Docs would provide the means to revolutionise the tasks performed.

3. Problem Description



1. Site engineers access to IT has been limited and construction sites have been notoriously low on technology. Technical support on-site is limited to a notepad, check forms and hard copies of drawings. On-site engineering requires continual referral back to the office for additional information and to complete/submit paperwork.
2. Technology provision between departments on-site has caused fragmentation, with the engineering department being provided with very little in the way of information communication technology.
3. Little or no investment has been put into developing a site based system that the site engineer can use and which links designers, contractors and the client.



3. Problem Description contd

4. Site records, in the form of hard copies, are collated by document control and are extensive for large projects. Storage of these documents could be minimised if in electronic format. Documents could then be easily stored, copied, duplicated and sent as required.
5. This project will mainly focus on the contractors in-house IT facilities, elements of which can be developed to link in with the designers and the client.
6. This report will relate to major projects which have clearly identified personnel roles and where there may be the provision of a larger budget and margins available for funding of a more progressive IT system.

4. Objectives/Benefits

1. Implementation timescales would require that the IT system be set in place, and adapted or modified for a project as required, before construction starts on site. This will ensure full application from commencement to completion.
2. Clearly defined procedures/operations requiring the application of the proposed IT system will need to be identified. These could be specified alongside quality control checks, health and safety checks, and sign off checks for example.
3. Progress reporting would also be linked into the system for the purpose of scheduling, for the planners, and for payments, for the quantity surveyors. Progress photographs and site diary records will be recorded by the system.

4. Objectives/Benefits contd

4. Electronically recorded data would be fed directly into the document control department where it would be stored in the site records.
5. Induction training will be required by the site engineers who will be using the ICT system to ensure full understanding and application.
6. IT system security would be required to ensure that it is protected from miss-use or tampering, as the information collated would form part of the site records.
7. Quality assurance audits would be conducted to ensure collated electronic data is complete and correct.
8. Time efficiency and productivity of site engineers would be improved.
9. Scalability of the system would be required to ensure it can be rolled out across the whole project.

5. Proposed Solution

- Tablet. The site engineer would be provided with a tablet (ipad or similar) for use on site.
- Applications and Programmes. Suitable and relevant applications and programmes would be installed on the tablet to carry out the specified tasks.
- Software. BIM in the cloud would be installed to provide full access to contract drawings, specifications and site instructions/variations.
- Document Sharing. Google Docs would be used for document sharing when preparing, amending and approving method statements etc.
- Progress and Reporting. A modified version of RSS Feed/Google Reader/Google News would be used to report progress, log diary events and submit photos etc.

6. Applications/Programmes & Software

- Tablet – ipad
- Construction Apps
- BIM in the cloud
- Google Docs
- Information Feed by electronic transfer

7. Definitions



- Site Engineer refers to a Section/Senior Engineer, Setting Out Engineer, Quality Control Engineer, Quality Assurance Engineer, Surveyor, Temporary Works Engineer.
- Documents refers to drawings, specifications, standards, site instructions, quality control inspections and checks, handover and sign off checks.