

# An Ancient Dilemma

A case study for use in teaching in Engineering Ethics

## Abstract

This scenario examines the case of a conflict between completing a project on time and within budget and respecting the demands of heritage.

## Teaching Format

1 or 2 hour session, small group discussions, presentations and class debate

## Practicalities

This session is aimed at students who have done some ethics before. It can be integrated into modules that consider different aspects of the construction process.

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## Relevant Ethical Concepts & Issues

- Duty
- Responsibility
- Instrumental & Intrinsic Value
- Duty to the Environment
- Professional Duty
- Duty to Preserve Heritage

More information about these concepts and issues can be found in the 'Glossary for Engineers' document

## Partners in producing this resource

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## An Ancient Dilemma

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JK Construction are the main contractors responsible for the excavation and building of a new dual carriageway between Norwich and Cambridge. This road will replace the existing single-lane B11 which is far too narrow to cope with the rise in traffic over the last 10-15 years. Often the 60 mile journey can take motorists in excess of two hours during peak times, with vehicles averaging only 5 mph on the busiest stretches.

JK's tender was accepted by the Highways Agency on the grounds that the project was to be completed in 22 months. This will mean that the road will be closed entirely for four months over the summer and then reopened in September 2006 as a single carriageway while the contractors work on finishing one half of the new dual carriageway. While this will cause much disruption, undertaking the excavation and widening of the old road during the summer when traffic is at its lightest will keep this disruption to a minimum. The timeline on this project is therefore very tight and failure to adhere to this will result in JK being heavily fined. The Highways Agency has already had to compensate various local businesses for the damage to their incomes which will inevitably result from the road closure. Any further cost will have to be incurred by JK themselves.

It is May 2006 and Jim Malone has been appointed as the foreman for the project. He is currently overseeing the initial phase which involves removing the top layer of tarmac from the existing road as well as digging out the path of the new lanes. This more intensive work comprises of digging into new soil to a depth of 5m in order to lay hardcore to form firm foundations for the forthcoming road. Due to the historic nature of the area, and the depth to which the foundations will be dug, archaeologists are also on site to examine any artefacts that may be uncovered during the excavation process. Dr Julian Prendergast is heading a team of four other archaeologists whom he has positioned at regular intervals along the construction site.

While a team of labourers is digging at part of the site close to the river they uncover some flints which appear to be primitive tools. Dr Prendergast is close-by so Joe, one of the labourers, calls him over to inspect the find more thoroughly. Dr Prendergast confirms that they are indeed Neolithic axe-heads, the discovery of which is unsurprising given that a wealth of Neolithic artefacts have been uncovered in this area of Norfolk over the last 50 years. He contacts Jim Malone and informs him that this part of the site will have to be closed off, and work cease, until he and his team have had time to explore it more thoroughly. Jim moves the team of labourers to get started on a different part of the site so that the schedule is not disrupted while Dr Prendergast and his team dig round the site of the flint tools.

Three days later, Dr Angela Haldane, a government archaeologist with a specialisation in prehistoric East Anglia uncovers a wooden beam. After a couple more hours of painstaking digging and brushing in an effort not to destroy any important archaeological evidence she finds another beam placed at right angles to the original beam. From her cursory inspection it seems that the team have chanced upon a prehistoric building of some kind. This is a very exciting moment; although many tools and ceramics have been discovered in this area before, no one has uncovered anything which looks like a permanent settlement. She consults with Dr Prendergast who agrees that the beams merit further inspection and that such a large job requires more manpower. He calls his superior in London who promises to send a team of ten more people who will be on site at 7am the following morning. Jim Malone is also contacted and told that this part of the site will not be reopened for some time- possibly 4-6 weeks.

Two months later, Jim is informed that he is allowed back on the site. It turned out that the wooden beams were not part of a building. Further inspection only revealed three more beams; an insufficient number to support a building, and there was no evidence of any stone work or foundations which one would expect to find in a site of this kind. Dr Haldane is disappointed but, during the process of digging out the beams, the team made another discovery. There is evidence of a reed-bed pathway, characteristic of the kind constructed by Neolithic fisherman to aid the transportation of food, people and cargo to and from the river. This evidence has been photographed extensively, and

taken away to the labs for further forensic tests to confirm its authenticity. So, whilst the find was not, as the team originally suspected, unique, the excavation has not been entirely fruitless.

Jim and his team move back on to the site the next day and continue with the excavation work. The closure of this part of the site has put the project four weeks behind schedule. However, Jim has completed other parts of the road more quickly than expected and has calculated that by asking for volunteers to work slightly longer shifts, he can have phase 1 completed by the end of September with the road opening to traffic in October as planned.

Later that day, whilst excavating an area of the new road 100m away from the site of the discovery of the reed-bed path Phil King, the JCB operator, sees what looks like a boat, or some kind of dugout canoe in the hole the machine has just created. He immediately reports his findings to Jim as site foreman.

Jim hesitates. It certainly looks like a canoe, but neither he nor Phil are experts, they may be mistaken. If they call the archaeology team in the site will be closed off again for at least two weeks and possibly more, and it may turn out that they were mistaken after all, and that the delay was for nothing. The archaeology team are also off-site today, aiding with the transportation of the reed-bed evidence back to the laboratories in London. If Jim were to instruct Phil to carry on with the digging, no one need ever know...

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## Tutor Notes

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This class should take the form of a debate between groups of students. Some will be arguing in favour of calling in the archaeologists, the others in favour of keeping quiet. It will probably be necessary to split the class into more than two groups. Aim for group sizes of 6-15 with no more than six groups in total. Students will be given time to read through the scenario and then be put into groups to prepare their cases. Each group will then present back to the whole class with a chance for people to ask questions. This will be followed by a discussion about the issues raised by the presentations. Finally, each student will be asked to vote for the course of action they would favour. (Times for each section given below are based on the lesson being two hours long. If teaching this session in a shorter slot, reduce the time allocated for preparation of the presentations and move straight from presentations to voting, omitting the questions and discussion in between.)

### **Introduction (10 minutes for this section)**

Firstly, each student should be given the scenario to read. Get the students to write down one or two sentences which summarise the problem that Jim Malone has.

Get a few students to read out their summaries. They should have grasped the fact that Jim is in a dilemma: if he calls the archaeologists back then the job will be delayed, probably causing the company to lose money, if he does not call the archaeologists back, then he is possibly destroying an important historical artefact. Ask the students by way of a show of hands to indicate what they would do in Jim's position: call the archaeologists back or not. Jot down the number of responses to come back to at the end of the class. Explain to the students that they are going to be split into groups to make the case either for or against calling the archaeologists back to the site.

### **Preparation for Presentation (30-40 minutes)**

Split the students into groups allocating half the class as 'for' and the other half as 'against' calling in the archaeologists and give them the corresponding handout. The groups are free to organise their presentations in any way that they want- part of the aim of this exercise is to enable students to develop research and presentation skills, however, the handouts give the students some questions that they might want the presentation to address and other tips about how they might want to structure their arguments. Presentations should last a **maximum** of 10 minutes. Make research material available- give students access to the internet or distribute some of the 'further reading' material given in this handout. When there are more than two groups in the class there will inevitably be some crossover in the content of the students' presentations. This can be minimised by giving different groups different background material but cannot be eliminated totally. However, even where groups cover the same content, they may have differing views or approach the issues from slightly different angles. These differences can be a useful starting point for the discussion section

### **10 minute break**

### **Presentations (20-30 minutes)**

Allocate each group 5 - 10 minutes to present their case. After each presentation allow brief clarifying questions from the other groups- there is time for the students to discuss things more fully after all groups have presented their cases.

### **Class Discussion (30 minutes)**

Open the floor to discussion from everyone. You might want to begin by asking whether they have changed their mind as a result of listening to the other group's presentation. You can also use any points of disagreement between the groups as a useful starting point for further exploration of the issues. It is helpful to write down comments from the class on a board or flipchart to emphasise what the students say and to refer back to during the conclusion. You could divide the board into two sections denoting the 'call in the archaeologists' and 'keep quiet' group noting the main reasons in favour of each case underneath.

### **Conclusion (5-10 minutes)**

Conclude the session by first asking the students to vote. They should vote twice- first for the course of action that they think is the *right* one to take, second for the presentation that they thought was the best or the most persuasive. (Depending on how the voting goes, it is often interesting to point out that the most persuasive speakers are not usually the ones presenting the ethical point of view!) The conclusion handout attached to these notes summarises the main ethical issues relevant in this case; this can be used as a basis for a short concluding section that you deliver yourself, and can also be distributed to the students for them to take away and reflect on.

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## Call in the Archaeologists- Group Handout

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Your task is to make the case that Jim Malone should call in the archaeologists. You will then present this case to the rest of the class in an oral presentation lasting no longer than 10 minutes. You can design the presentation however you like as long as you stick to the following guidelines:

**Make your case.** You need to give a number of reasons why Jim ought to call in the archaeologists. Don't just list these reasons but try and back them up with evidence and arguments.

**Research thoroughly.** You will be given access to lots of different resources (books, articles, the Internet). Use these resources well to find relevant information to strengthen your case.

**Structure your argument.** You only have a short amount of time to get your point across. Make sure that your presentation is structured and clear. Run through each point in favour of your case and back each point up with evidence and examples.

**Present clearly.** You will have to persuade others that yours is the best case. Sound interested in what you are saying and this will make others listen!

**Stuck for ideas? Here are some questions that might help you get started:**

- Who are the stakeholders in this case? What are their interests? ('Stakeholders' means everyone likely to be affected by Jim's actions both long- and short-term.)
- How is Jim related to each of the stakeholders? What duties or responsibilities (if any) does he have towards each of them?
- Are there any practical issues surrounding fulfilling each of these duties? (e.g. Are there deadlines and/or rules which must be obeyed?) Does solving any of these practical issues create new problems for other stakeholders?
- Note that calling in the archaeologists may not be the obvious thing to do: think of all the people that may be affected this. How should their needs be taken into account?

You may also want to separate out the different kinds of issue that Jim has to face, looking at the legal, practical and ethical aspects of his decision. You should focus on the ethical issues that Jim must face, but often the answers to ethical questions can be informed by answers to practical or legal questions:

**Legal:** What does the law say? How does this affect what Jim should do?

**Practical:** What will the practical consequences of Jim's decision? How do these consequences affect what you think he should do?

**Ethical:** What ought Jim to do, ethically speaking? Does Jim have any moral responsibilities to fulfil? What are these responsibilities? Who are they to? Can Jim fulfil all these responsibilities at once? If not, can he 'prioritise' these responsibilities and fulfil the most important one?

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## Keep Quiet- Group Handout

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Your task is to make the case that Jim Malone should not call in the archaeologists. You will then present this case to the rest of the class in an oral presentation lasting no longer than 10 minutes. You can design the presentation however you like as long as you stick to the following guidelines:

**Make your case.** You need to give a number of reasons why Jim ought not to call in the archaeologists. Don't just list these reasons but try and back them up with evidence and arguments.

**Research thoroughly.** You will be given access to lots of different resources (books, articles, the internet). Use these resources well to find information which can strengthen your case.

**Structure your argument.** You only have a short amount of time to get your point across. Make sure that your presentation is structured and clear. Run through each point in favour of your case and make sure you back each point up with evidence and examples.

**Present clearly.** You will have to persuade others that yours is the best case. Sound interested in what you are saying and this will make others listen!

**Stuck for ideas? Here are some questions that might help you get started:**

- Who are the stakeholders in this case? What are their interests? ('Stakeholders' means everyone likely to be affected by Jim's actions both long and short term.)
- How is Jim related to each of the stakeholders? What duties or responsibilities (if any) does he have towards them?
- Are there any practical issues surrounding fulfilling each of these duties? (e.g. Are there deadlines and/or rules which must be obeyed?) Does solving any of these practical issues create new problems for other stakeholders?
- Will keeping quiet involve bending the rules? If so, are there good reasons why this could be justified in this case?

You may also want to separate out the different kinds of issue that Jim has to face, looking at the legal, practical and ethical aspects of his decision. You should focus on the ethical issues that Jim must face, but often the answers to ethical questions can be informed by answers to practical or legal questions:

**Legal:** What does the law say? Will Jim be breaking the law by keeping quiet? How does this affect what Jim should do?

**Practical:** What will the practical consequences of Jim's decision? How do these consequences affect what you think he should do?

**Ethical:** What ought Jim to do, ethically speaking? Does Jim have any moral responsibilities to fulfil? What are these responsibilities? Who are they to? Can Jim fulfil all these responsibilities at once? If not, can he 'prioritise' these responsibilities and fulfil the most important one?

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## Student Handout- Conclusion

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This case concerned a dilemma between finishing a project on time and doing one's duty by reporting archaeological finds to the appropriate authorities. Jim found himself in a dilemma because there were a number of competing concerns:

**Duty to his employer:** As an employee of JK construction he has been given the responsibility of overseeing the project and making sure that it runs to time. He also knows that his company will lose money if the job is behind schedule

**Duty to the local community:** Local businesses have already been disrupted due to the construction of the road and have had to be compensated for their loss of earnings during this time. Further delay to the road can only result in further losses which smaller companies may be unable to sustain. Local people will also have been put to considerable inconvenience so far; by noise and dust from the construction site but also from disruption to their access to work, school etc.

**Duty to preserve heritage:** There are a number of reasons that archaeological finds are important:

- Knowledge & Education: archaeological ruins may be the only evidence of our distant past and provide essential knowledge about our cultural heritage. There is an opportunity to learn about the rise and fall of civilisations via archaeological finds.
- Tourism: Heritage sites and finds are popular with tourists and can prove vital for local economies.
- National identity: Tracing our heritage is part of our national identity and new archaeological finds can consolidate this identity.
- Intrinsic Value: Archaeological finds are just valuable in their own right, as is tracing our history.

**Professional Duty & Honesty:** It may be considered to be part of Jim's professional duty as an engineer to be honest. Honesty is important especially when placed in a position of trust – it is something that we expect of others and therefore we fail them when we are dishonest. Jim and others like him who are involved in excavation all the time can be reasonably expected to report any archaeological finds and so failure to report them is a dereliction of this duty. Honesty is also characteristic of people with integrity and is generally a characteristic worth cultivating in order to become a better person. Jim is also in a position of authority over other employees such as Phil King. If the company expects honesty from all its employees then it is Jim's responsibility to set an example for other employees to follow.

It is difficult to fulfil these competing duties...

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## Further Reading

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### Archaeology

- Scarre, G. (2003) 'Archaeology and Respect for the Dead', *Journal of Applied Philosophy* **20 (3)**, 237–249.
- Scarre, C. & Scarre, F. (eds.) (2006) *The Ethics of Archaeology: Philosophical Perspectives on Archaeological Practice*, Cambridge: CUP.
- Wylie, A. (2002) *Thinking from Things: Essays in the Philosophy of Archaeology*, Berkeley: University of California Press. Esp. Part 5.

### Duties to Employers

- Baier, K. (1984) 'Duties to One's Employer' in Regan, T. (ed.) (1984) *Just Business: New Introductory Essays in Business Ethics*, New York: Random House: 60-99.
- Scrag, B. (2001) 'The Moral Significance of Employee Loyalty', *Business Ethics Quarterly* **11 (1)**: 41-66.

### Honesty

- Martin, M. & Schinzinger, R. (2005) *Ethics in Engineering*, 4<sup>th</sup> edition, New York: McGraw-Hill, chapter 7.

### Promise-Keeping

- Kagan, S. (1998) *Normative Ethics*, Westview. 116-125.
- Kraut, R. (2007) *What is Good and Why: The Ethics of Well-Being*, Cambridge MA: Harvard University Press. 215-224.

### Newspaper/ Web Articles

- The Guardian. Archaeological find in Berkshire sewage works: <http://arts.guardian.co.uk/news/story/0,,1939933,00.html>
- The Guardian. Uffington horse ruined by 'Big Brother' logo; <http://arts.guardian.co.uk/news/story/0,,949415,00.html>
- Road excavation leads to archaeological find in Northern Ireland. Official government site: <http://archive.nics.gov.uk/rd/040831a-rd.htm>
- Why is archaeology important? Blog from Ohio History Society, USA: <http://ohio-archaeology.blogspot.com/2006/06/why-is-archaeology-important.html>

### Official Publications

- Planning & Policy Guidance for local governments. Number 16 relates to archaeology and planning and can be downloaded from this site. <http://www.communities.gov.uk/index.asp?id=1143926>
- Two documents from English Heritage advising developers on how to deal with archaeological remains:
  - <http://www.english-heritage.org.uk/upload/pdf/Managing-Lithic-Scatters.pdf>,
  - [http://www.english-heritage.org.uk/upload/pdf/Identifying\\_and\\_Protecting\\_Palaeolithic\\_Remains.pdf](http://www.english-heritage.org.uk/upload/pdf/Identifying_and_Protecting_Palaeolithic_Remains.pdf)

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<http://www.engsc.ac.uk/downloads/scholarart/ethics/ancientdilemma.pdf>