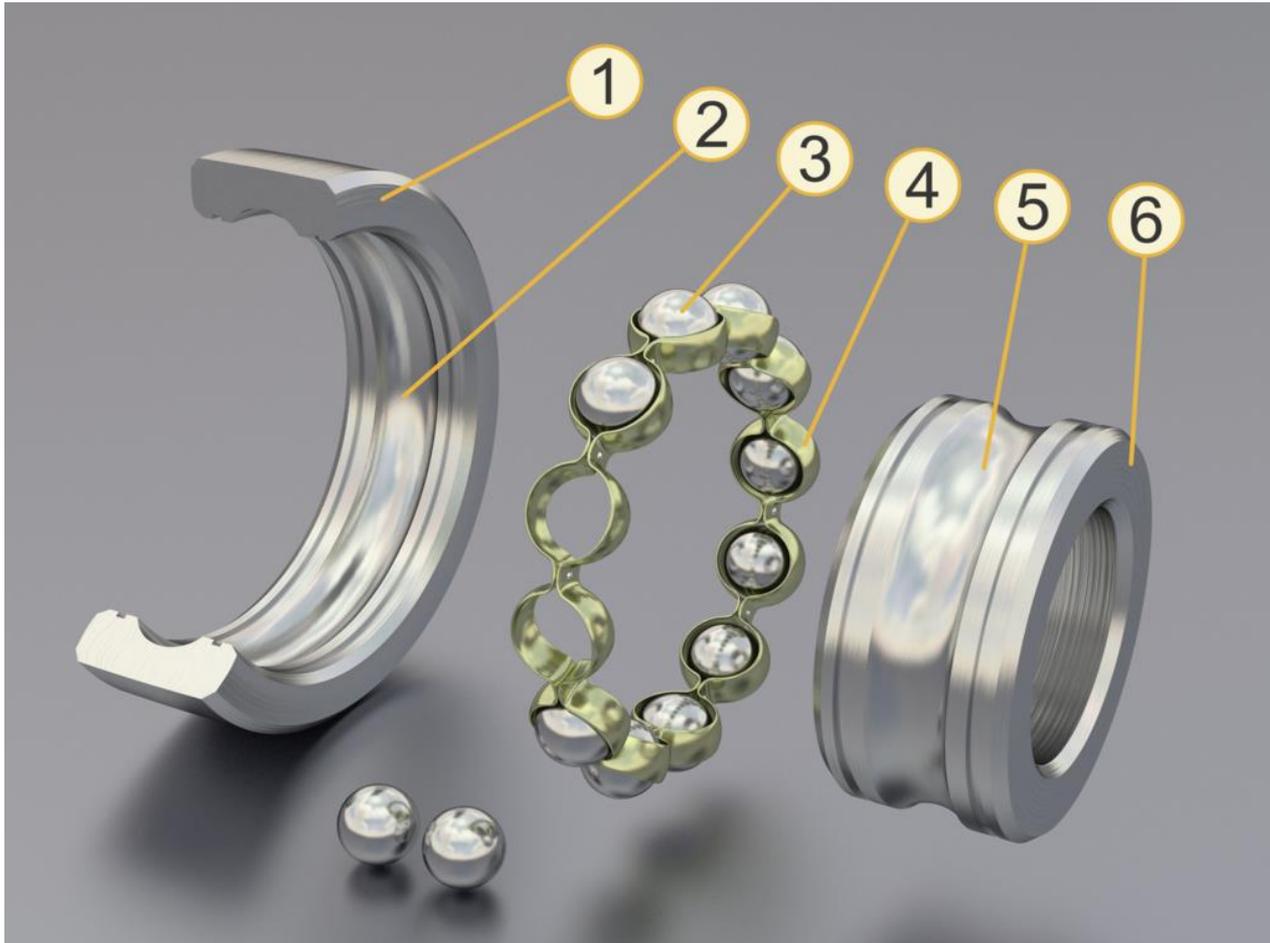


# EXPLOITING TECHNICAL DRAWINGS

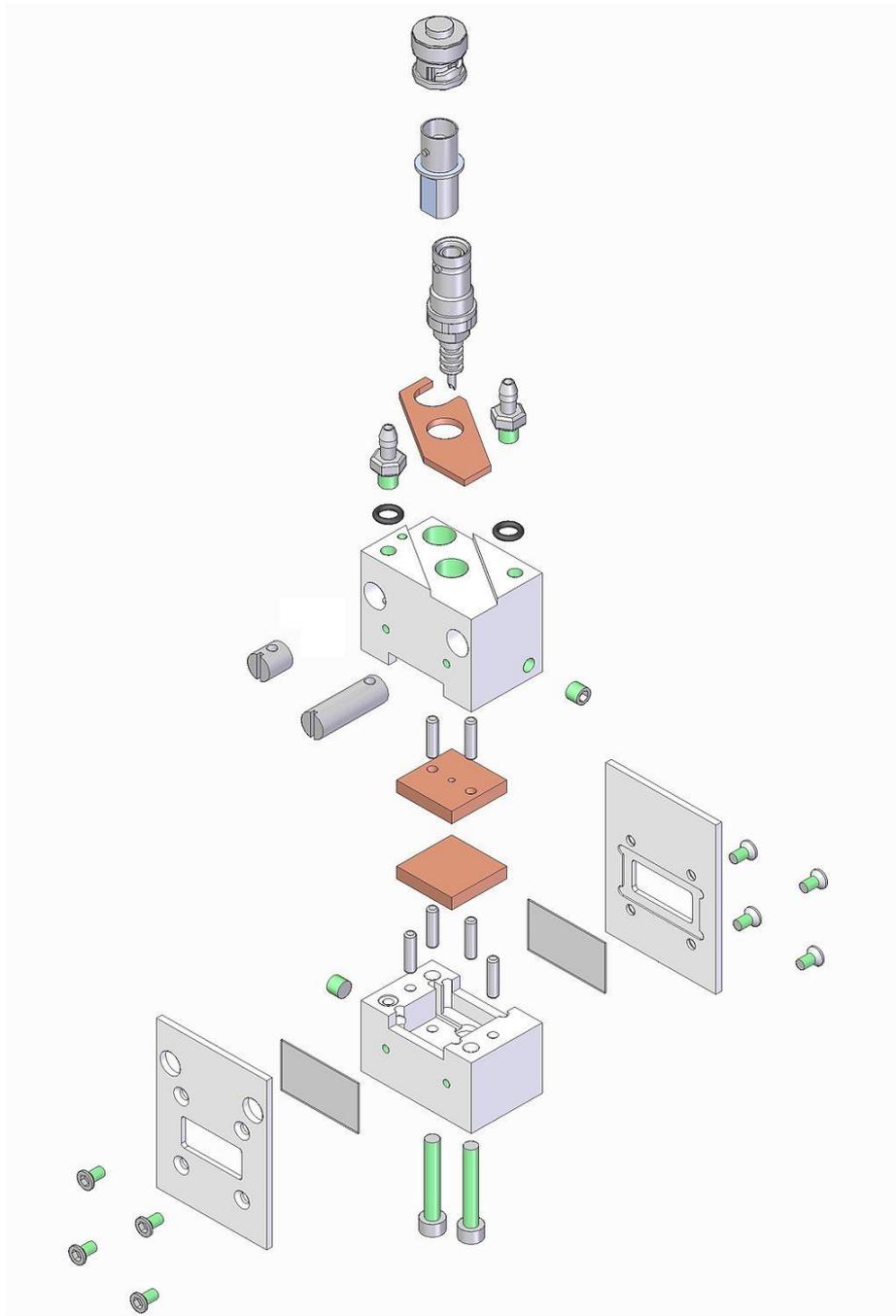
01	001 - 001	ISO2768 - #8	Material	
Quantity	Part Id / number	Fabrication tolerances	Material	
Mod.		Drawn by:	Drawer name	Scale X : X 
		Controlled by:	Controller name	
		Date	Date	
Company name	Part name	Project number / Id		

# Types of technical drawings

What types do you know?



By Niabot (Own work) [CC BY-SA 3.0 (<http://creativecommons.org/licenses/by-sa/3.0/>)], via Wikimedia Commons  
<https://commons.wikimedia.org/wiki/File%3ABall-bearing-numbered.png>

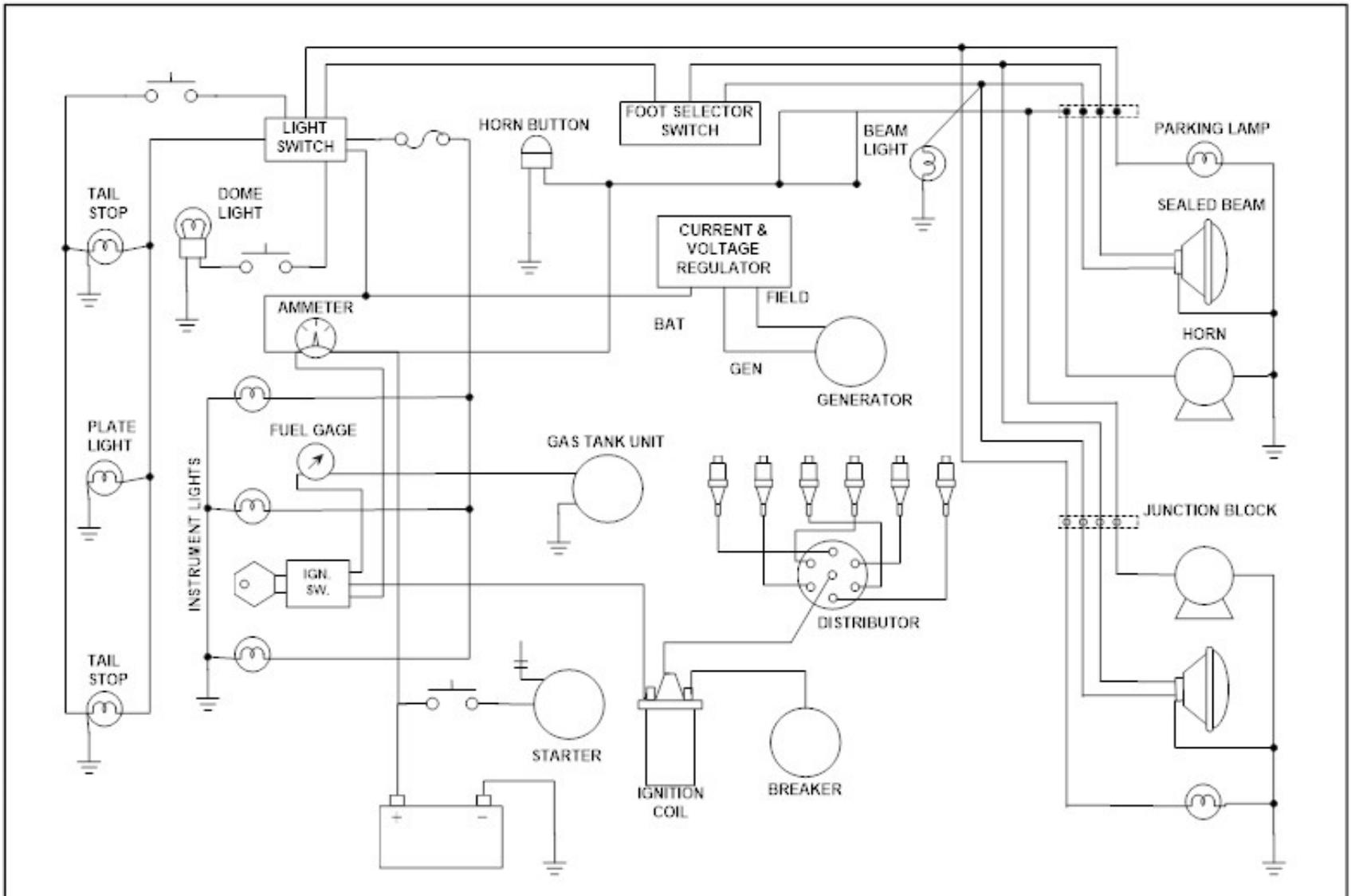


# Exploded view

By Thomas.dose (Own work) [CC BY-SA 3.0 (<http://creativecommons.org/licenses/by-sa/3.0>)], via Wikimedia Commons

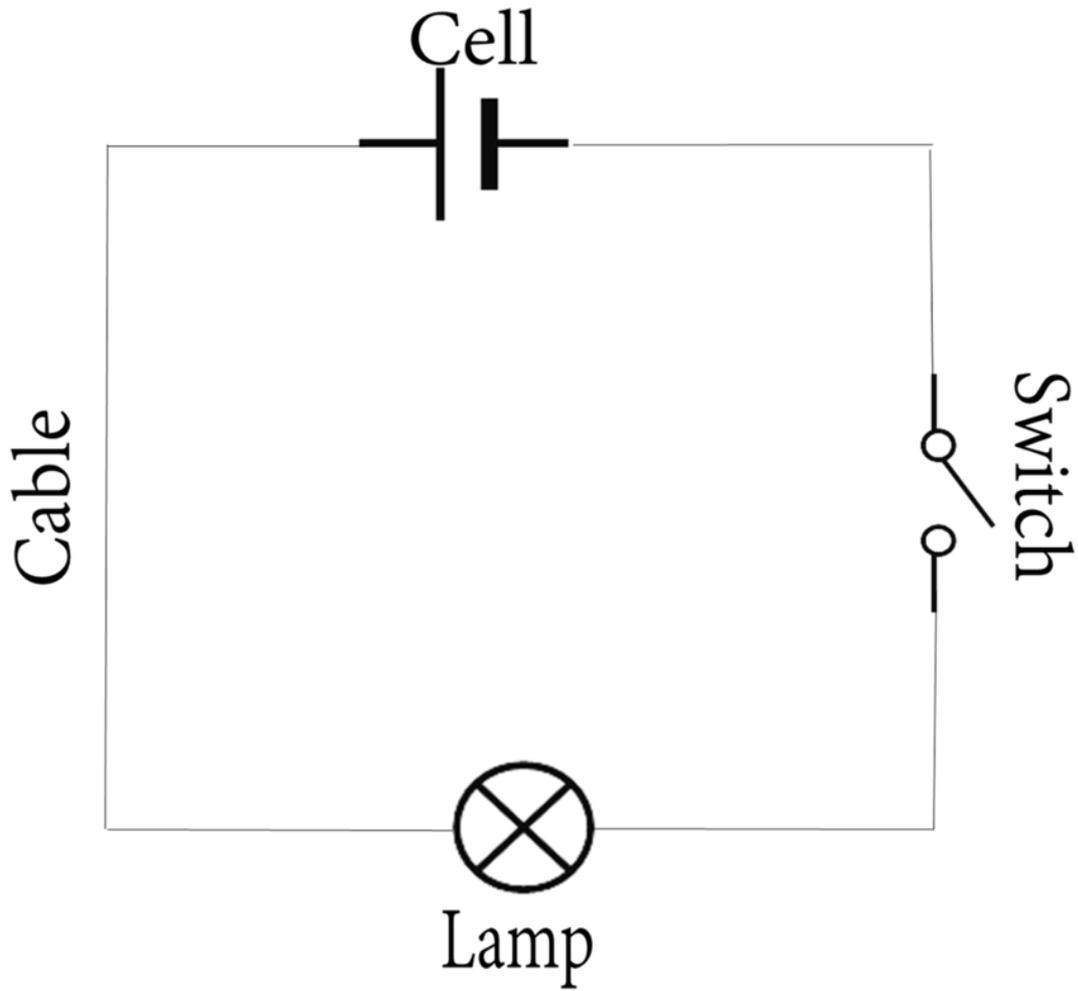


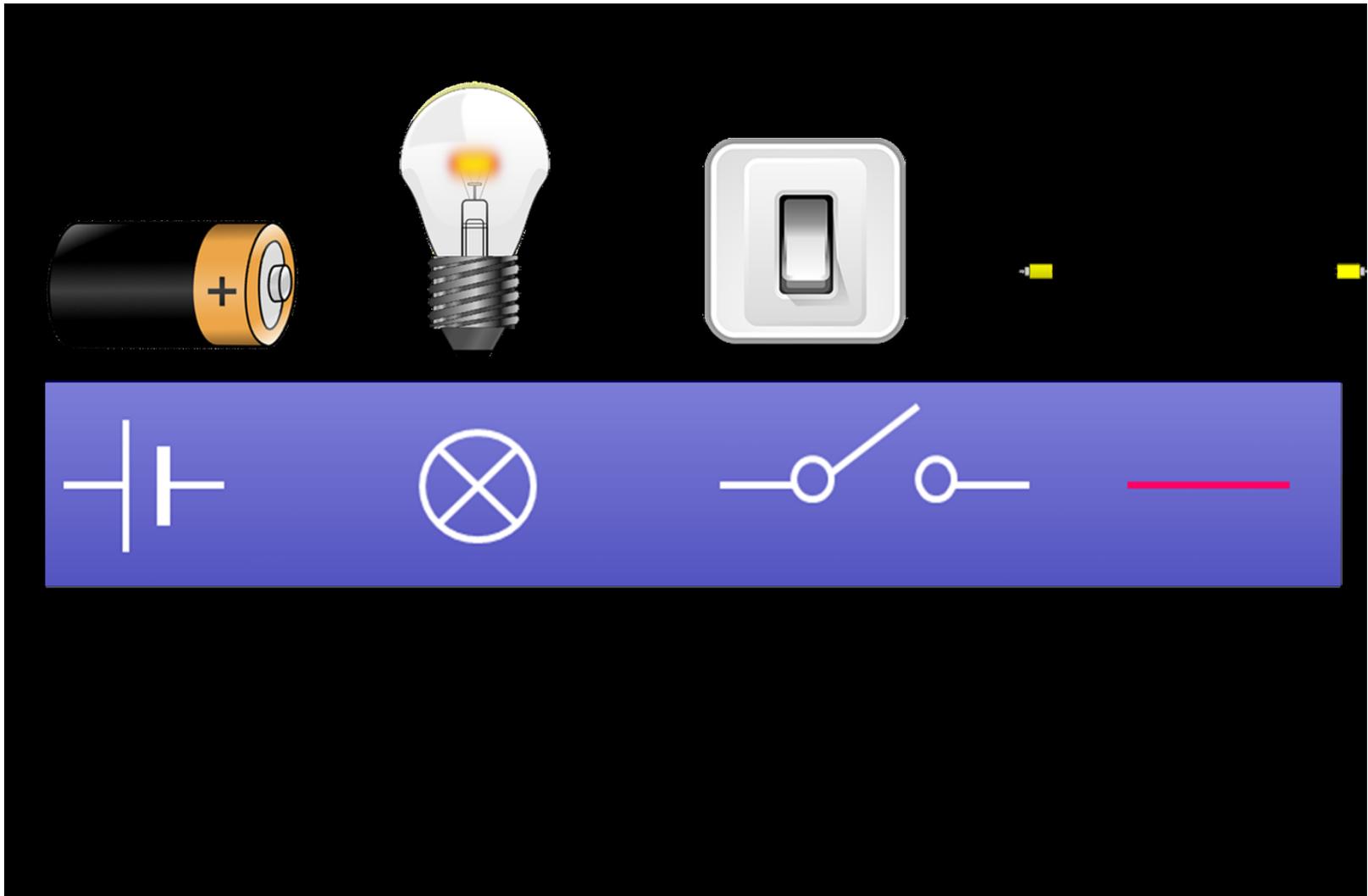
Cape Style, 1F



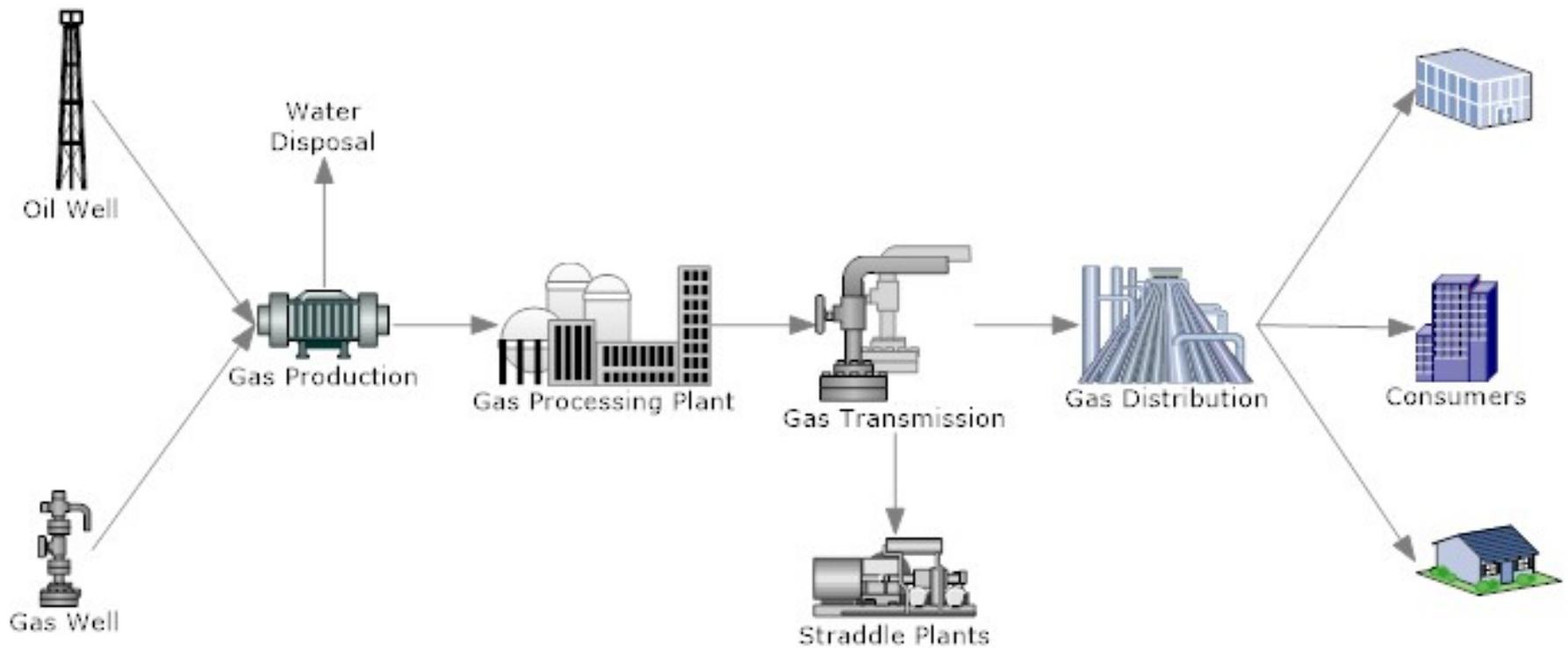
**WIRING DIAGRAM**  
 AUTO ELECTRICAL WIRING DIAGRAM

DRAWN BY	CHECKED	DATE	SCALE	SHEET NO.
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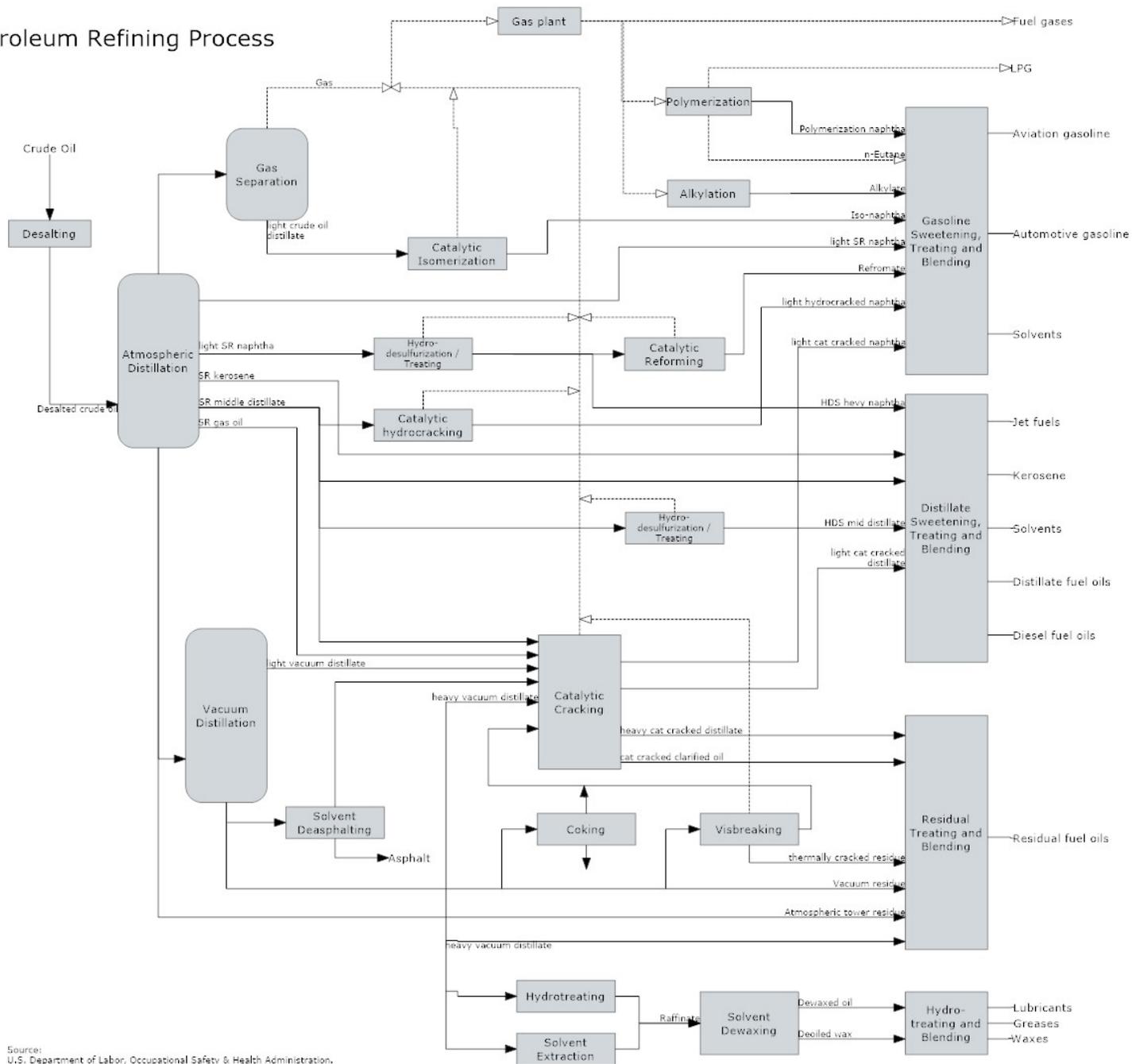


# Natural Gas Industry

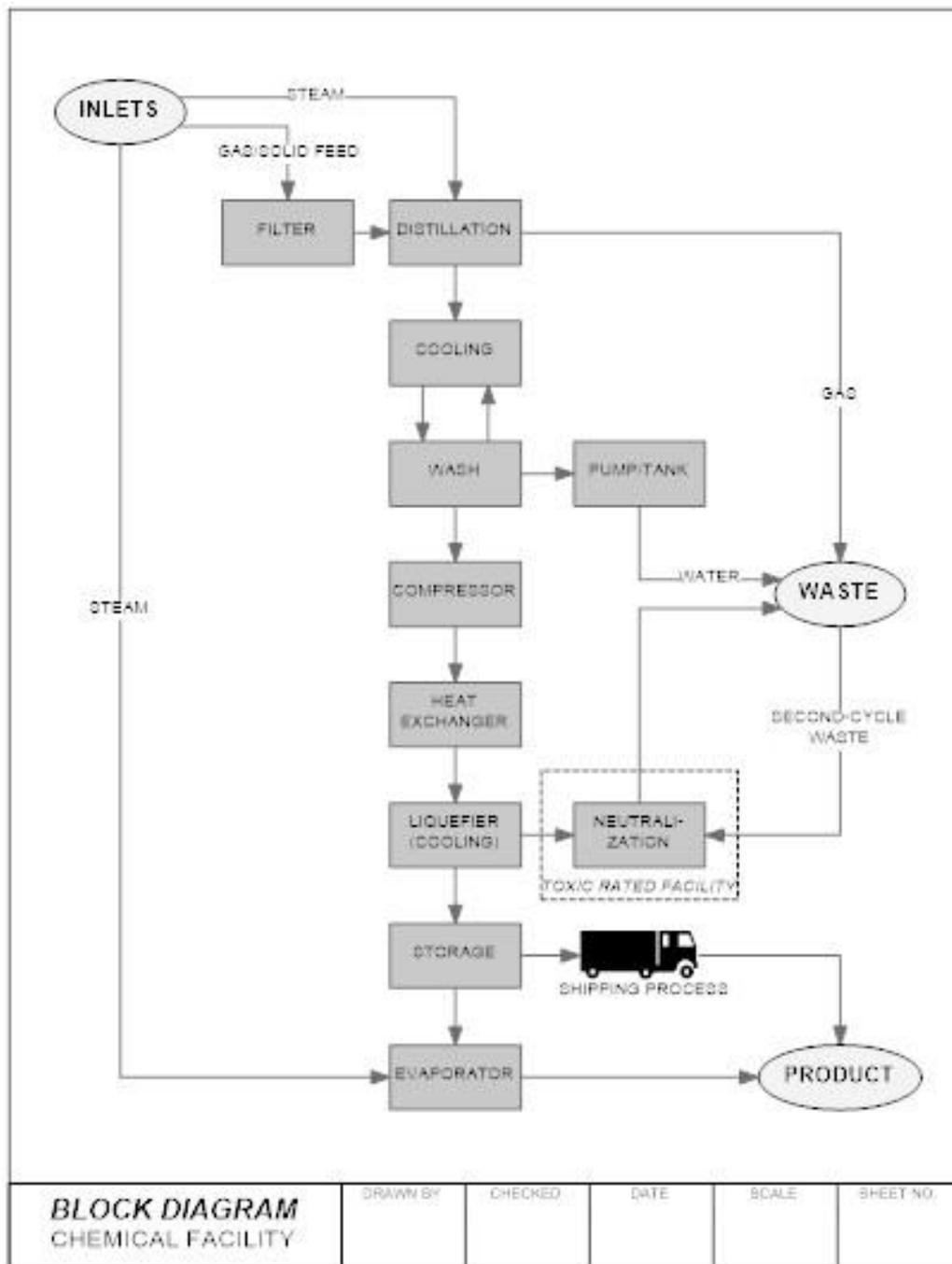


—Upstream Natural Gas Industry— | —Midstream Natural Gas Industry— | —Downstream Natural Gas Industry—

# Petroleum Refining Process

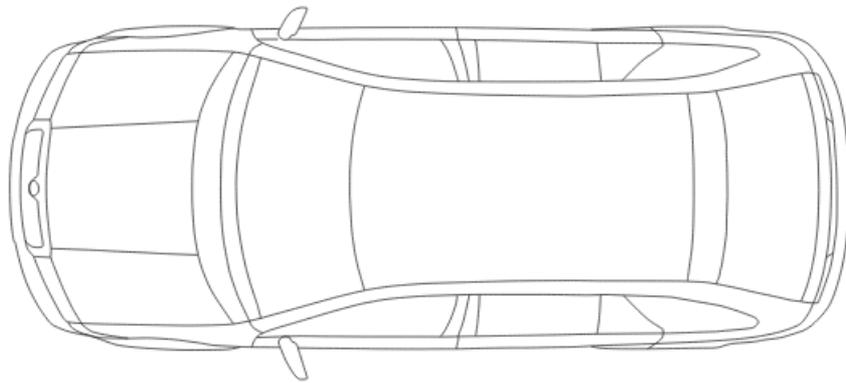
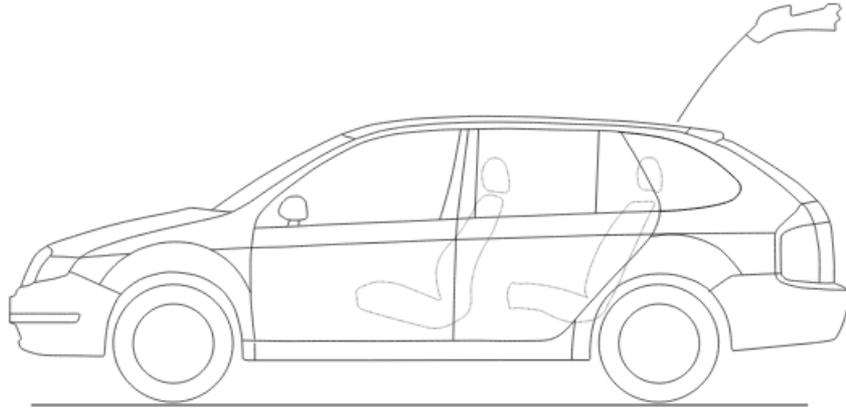
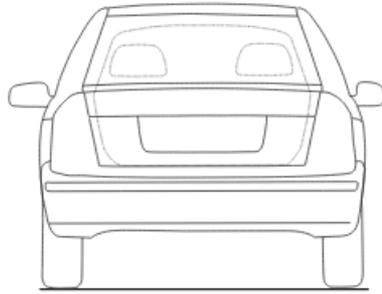
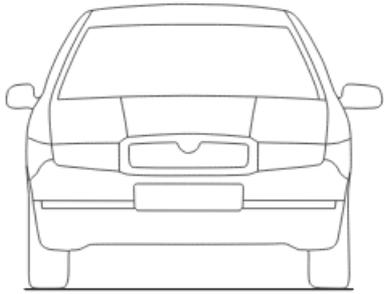


Source: U.S. Department of Labor, Occupational Safety & Health Administration.

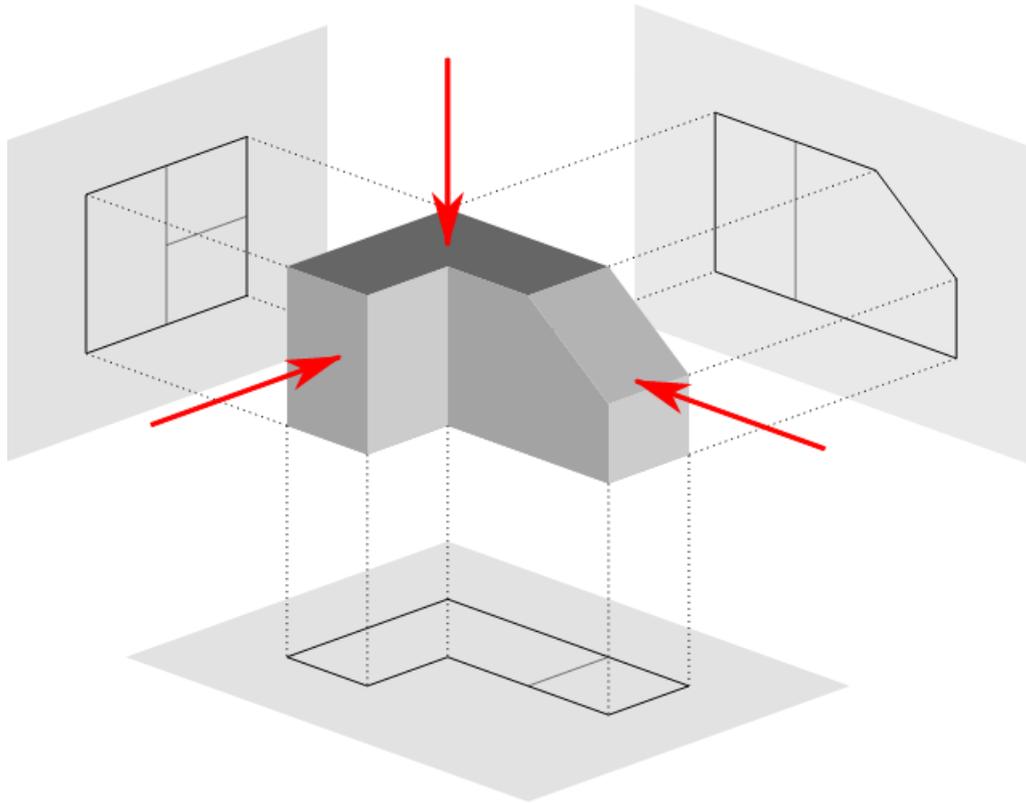


**BLOCK DIAGRAM**  
CHEMICAL FACILITY

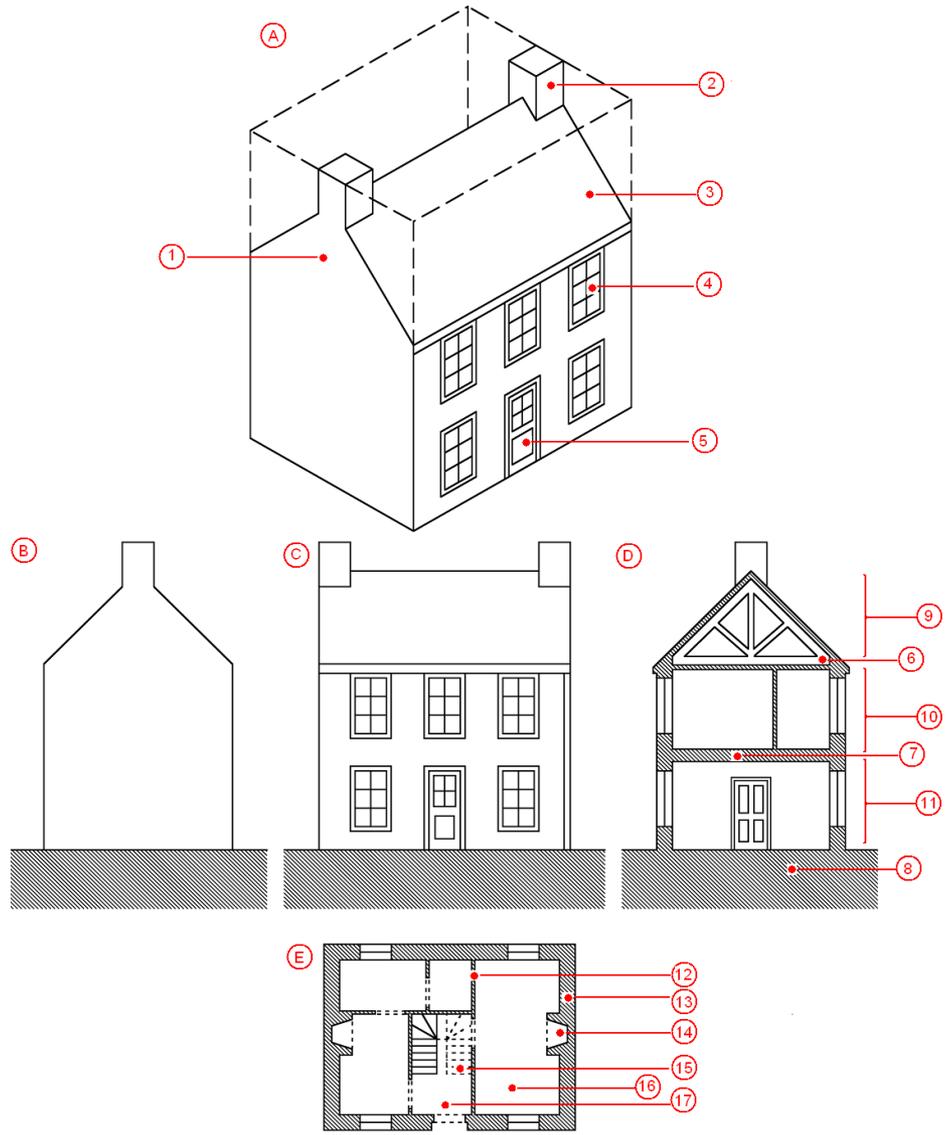
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# Orthographic projection – (3D to 2D)

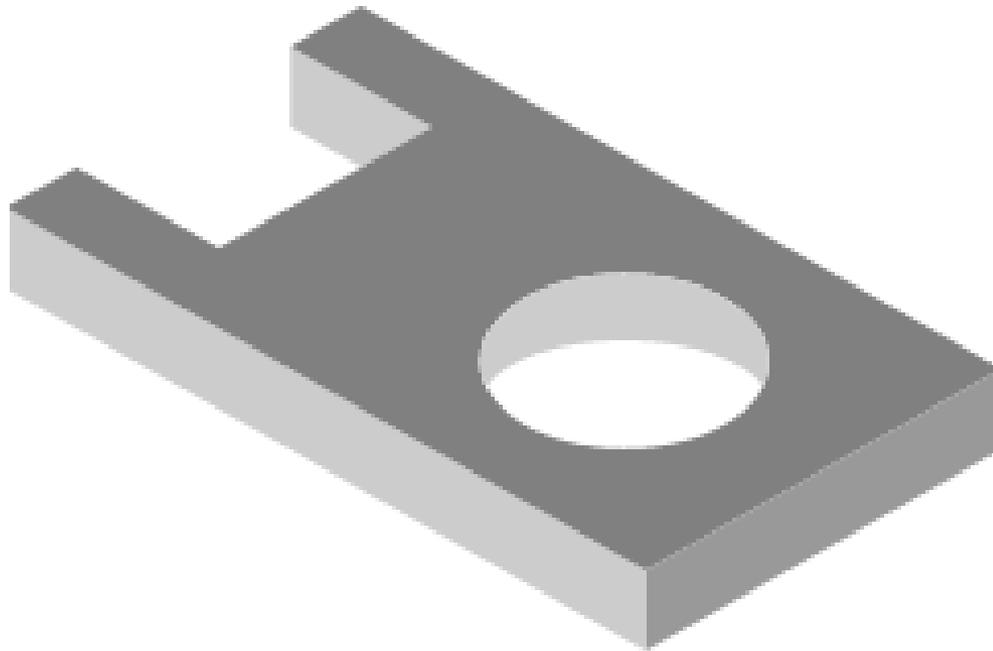


By en:User:Iseeaboar, vectorized by Biezl (Own work) [CC BY-SA 3.0 (<http://creativecommons.org/licenses/by-sa/3.0>) or GFDL (<http://www.gnu.org/copyleft/fdl.html>)], via Wikimedia Commons

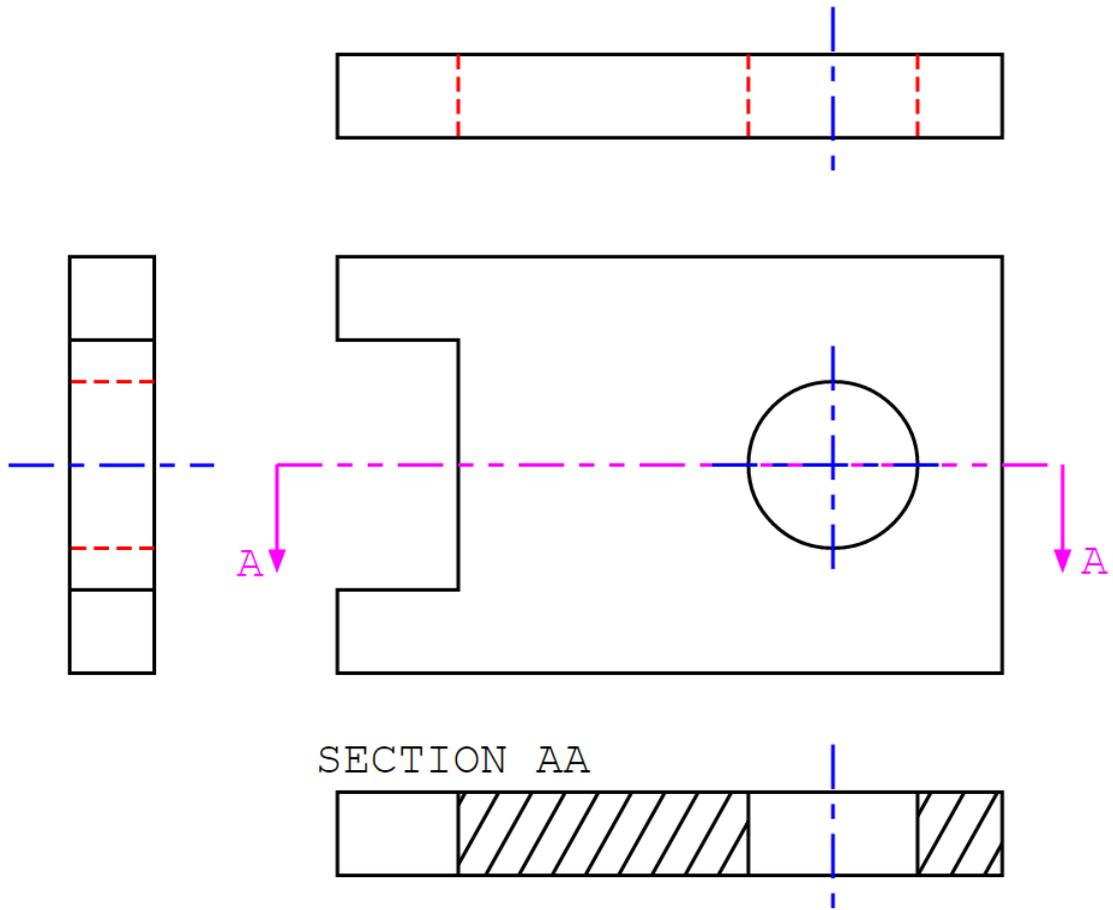


"House numeric labels" by Architectural\_drawing\_001.png: ProfDEHderivative work: InfoCan - This file was derived from Architectural drawing 001.png. Licensed under CC BY-SA 3.0 via Wikimedia Commons - [https://commons.wikimedia.org/wiki/File:House\\_numeric\\_labels.PNG#/media/File:House\\_numeric\\_labels.PNG](https://commons.wikimedia.org/wiki/File:House_numeric_labels.PNG#/media/File:House_numeric_labels.PNG)

# Task: orthographic projection



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(<http://www.gnu.org/copyleft/fdl.html>)], via Wikimedia Commons

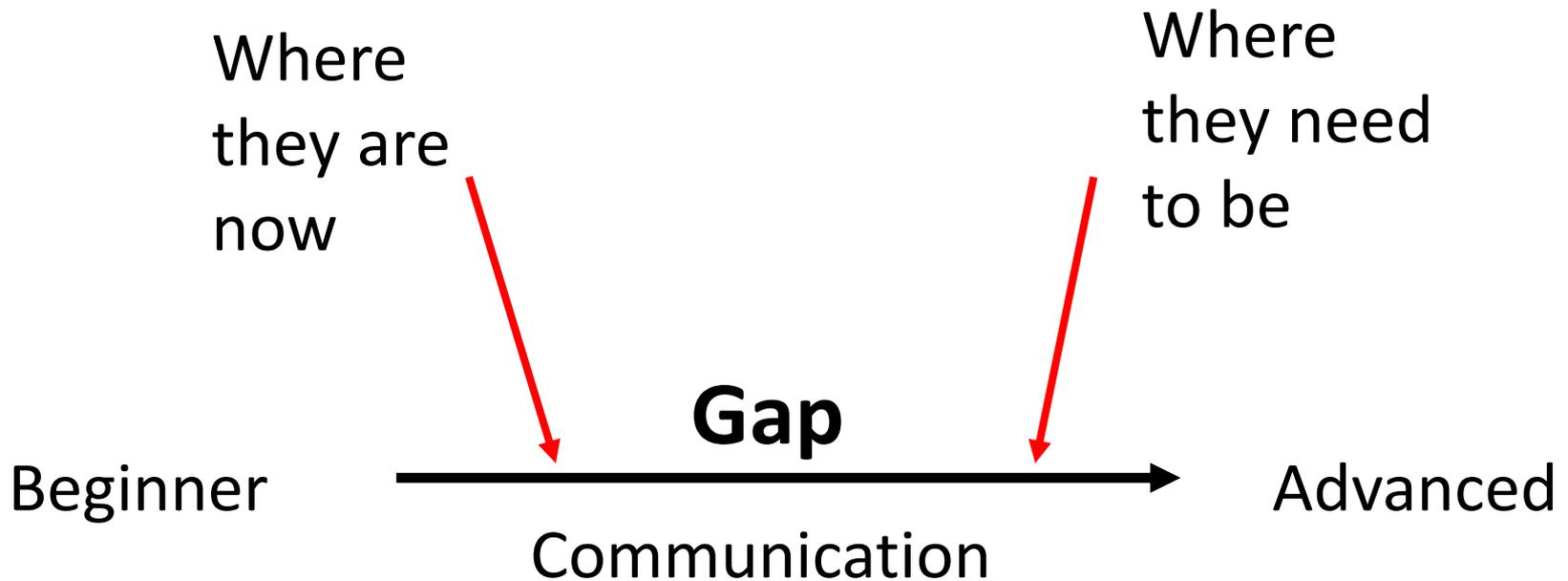


By HereToHelp, based on BAxelrod [CC BY-SA 3.0 (<http://creativecommons.org/licenses/by-sa/3.0>) or GFDL (<http://www.gnu.org/copyleft/fdl.html>)], via Wikimedia Commons



# Needs analysis

# Finding the gap



# Task

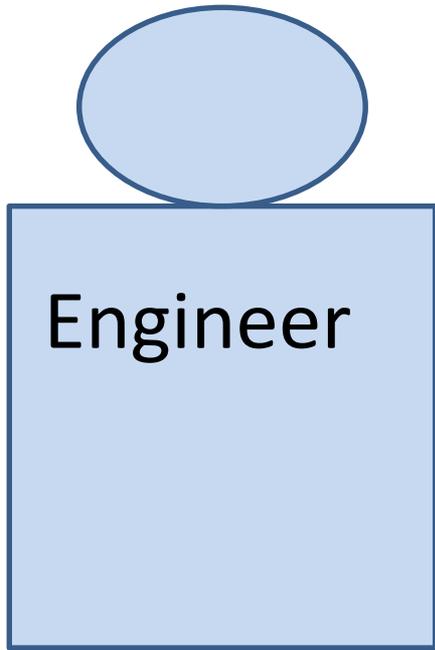
- Form groups of three or four.
- Person 1. Draw a sketch of a room in your home, showing where all the furniture is. Explain to Person 2 why the furniture is laid out the way it is.
- Person 2. Interact with Person 1. Ask questions to clarify if necessary.
- Person 3 / 4. Make notes of the key language the two people use. Be prepared to share it afterwards.

# A day in the life of ...

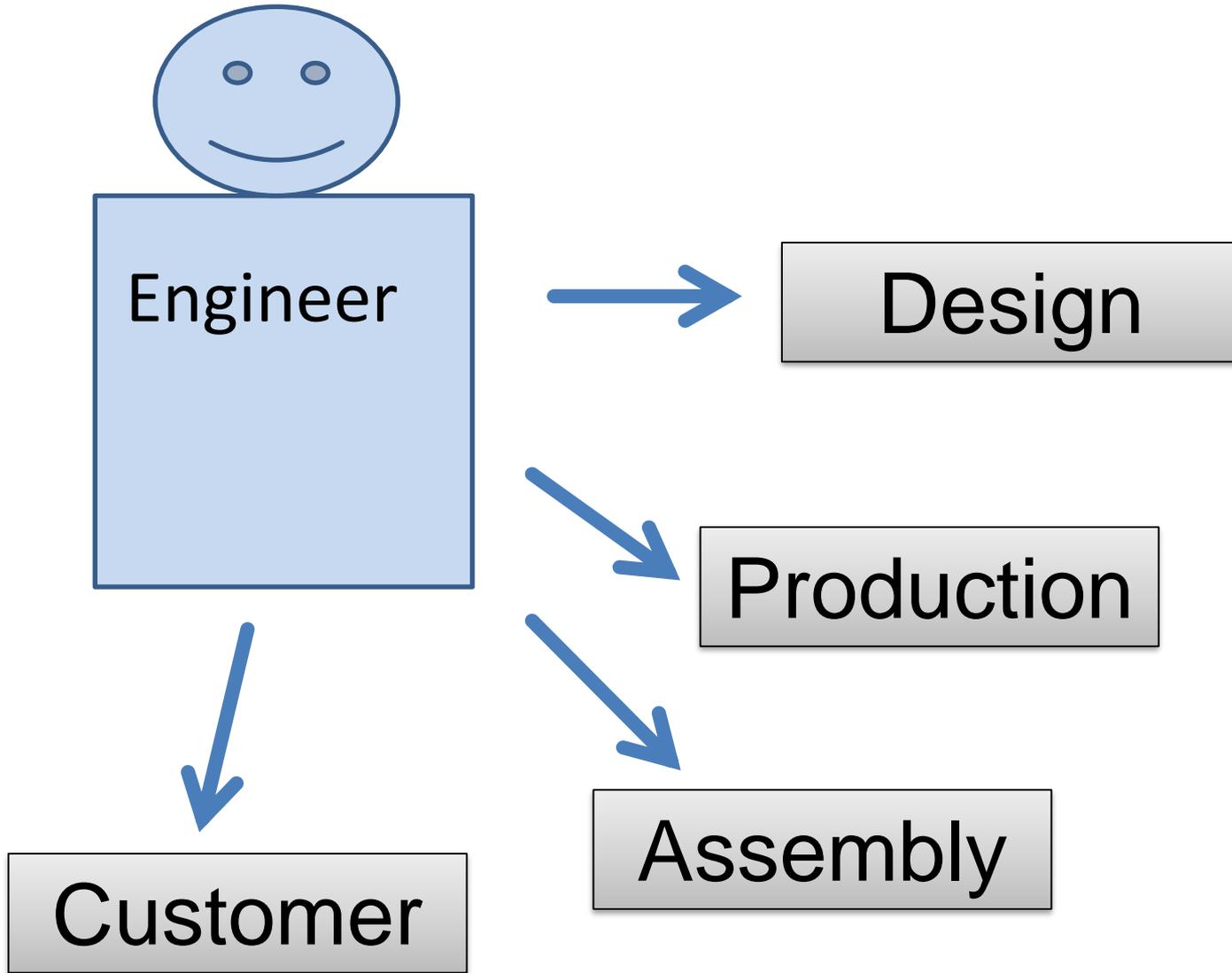
Watch the [video](#). Think about how professionals use technical drawings.

# Goffmann - front-stage / back stage





Engineer



# Needs analysis

- Use expert insiders to get access to target language.
- Remember the difference between front-stage and back-stage communication.

# Vocabulary work

# Vocabulary

## Technical vocabulary

(e.g. cooker, chair, table)



## Language of 'conversation

- Vague language (e.g. “and stuff”, “something like that”)
- Hedging (e.g. “kind of”, “sort of”)
- Discourse markers (e.g. so first of all, anyway)
- Clarifying (e.g. Do you know what he wants us to do?)

“Technical vocabulary is subject related, occurs in a specialist domain, and is part of a system of subject knowledge.”

Chung, TM., & Nation, P. (2004). Identifying Technical Vocabulary. System 32 pp 251–263

# The problem of lexical sets

“Learning new words is a cumulative process, with words being enriched and established as they are met again. Learning related words in sets is not a good idea for initial learning. As learners’ knowledge becomes more established, seeing related words in sets can have a more positive effect.”

# A good vocabulary exercise:

1. focuses on useful words, preferably high frequency words that have already been met before.
2. focuses on a useful aspect of learning burden. It has a useful learning goal.
3. gets learners to meet or use the word in ways that establish new mental connections for the word. It sets up useful learning conditions involving generative use.
4. involves the learners in actively searching for and evaluating the target words in the exercise.
5. does not bring related unknown or partly known words together. It avoids interference.

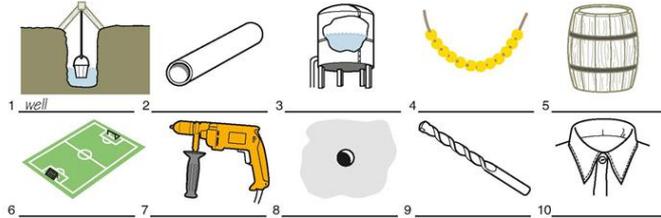
# 3

## Oil fields

- Talk about oil field equipment
- Give and understand instructions for operating equipment
- Describe control panels
- Tell the time
- Understand warning signs
- Make conversation

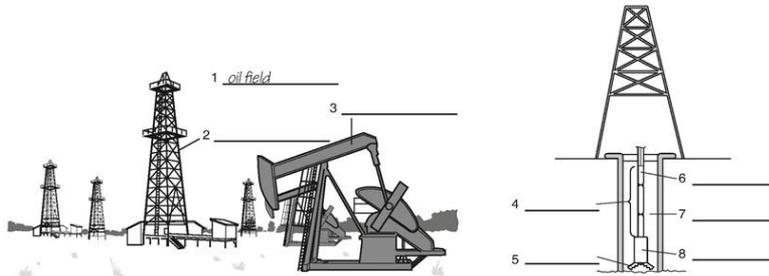
### Oil field equipment

**Vocabulary 1** 23 Listen and write down the labels for the pictures.



**2** Label these diagrams with the words in the box.

well hole	pumpjack	derrick	drill pipe
drill string	drill collar	drill bit	oil-field

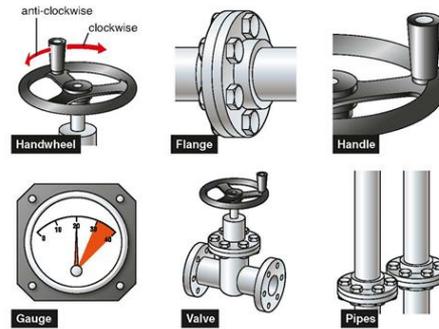


**Speaking 3** Practise in pairs. Look at the diagrams. Ask and answer questions.

- A: *What's this?*  
 B: *It's a drill pipe. What are those?*  
 A: *Those are derricks.*

### Operating equipment

**Vocabulary 1** Look at the pictures on the left. Then look at the photo on the right. What can you name?



**Listening 2** 24 Listen to and read the conversation.

**Supervisor:**

OK. Listen carefully.  
 First, you turn this handwheel.  
 No, anti-clockwise.  
 Turn it until it's open.  
 Next, close this valve.  
 And then wait a couple of minutes.  
 Then read the gauge and write the pressure in the log book.  
 And finally, check the flanges and the valves.  
 Yes, that's right.

**Trainee:**

Understood.  
 Clockwise?  
 OK, anti-clockwise.  
 OK. Until it's open.  
 OK. Then close the valve.  
 Wait a couple of minutes.

OK. Got that.  
 For leaks?

**3** Match the verbs 1-5 with the nouns a-e.

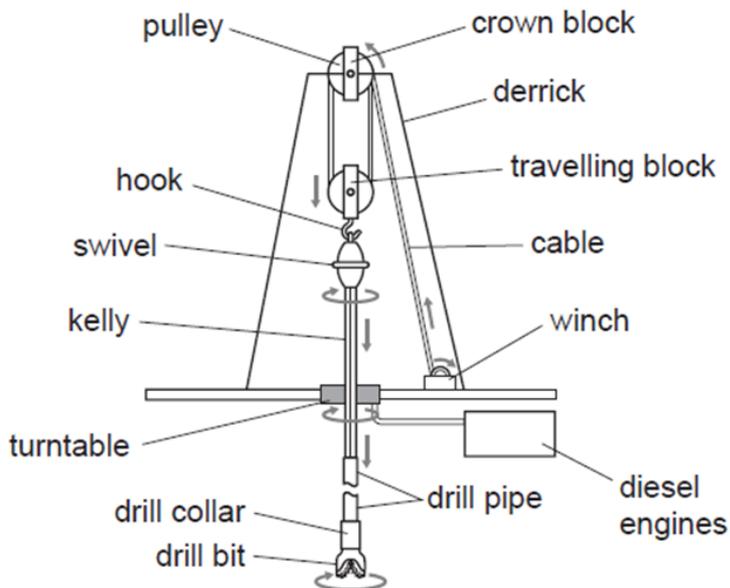
- |         |                 |
|---------|-----------------|
| 1 Turn  | a) the gauge    |
| 2 Close | b) the pressure |
| 3 Read  | c) the valve    |
| 4 Write | d) the wheel    |
| 5 Check | e) the flanges  |

**Speaking 4** Work in pairs. Student A turn to page 68. Student B turn to page 79.

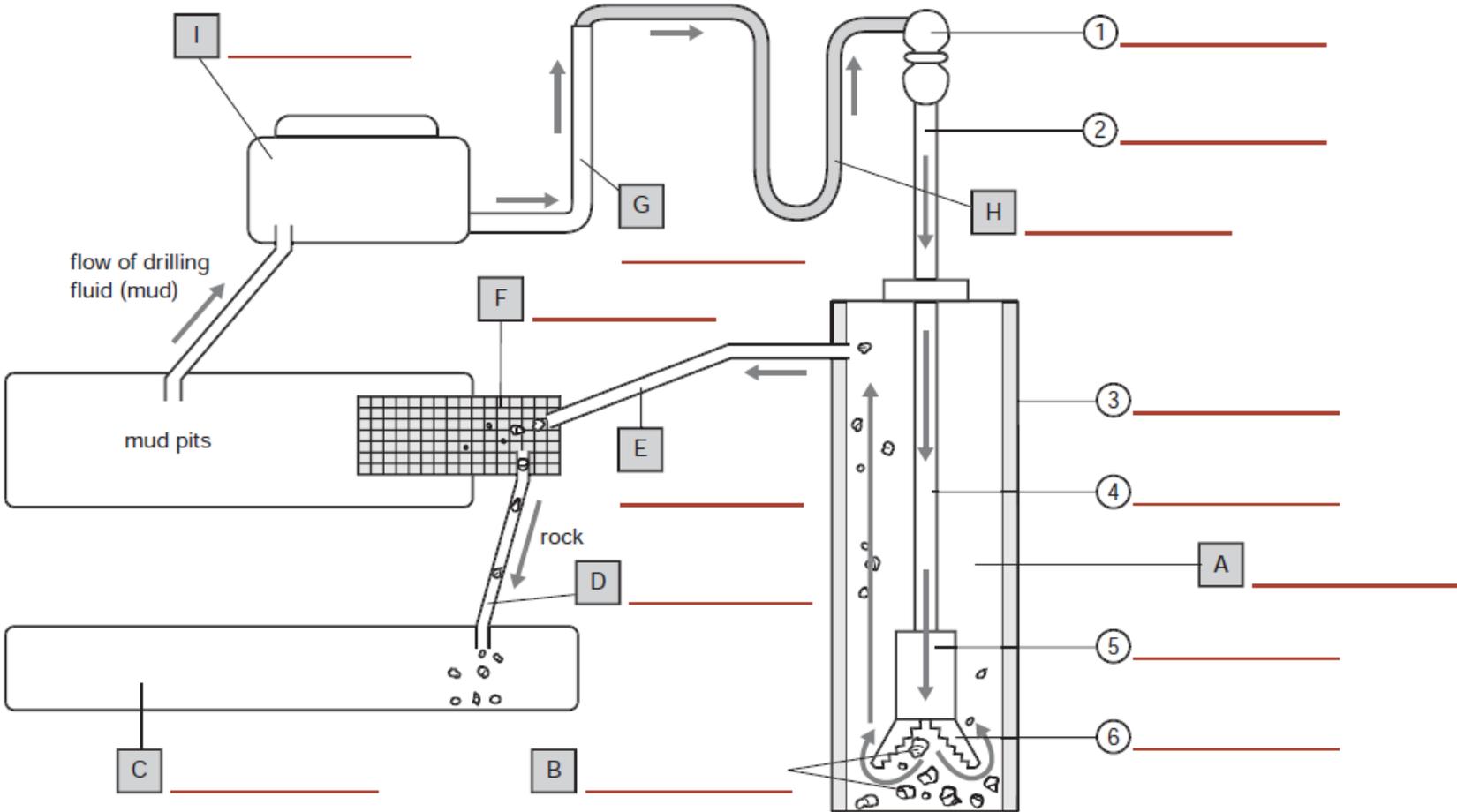
**5** Now compare your notes with others in the class.

**1** Study this diagram of the lifting and rotary systems of an oil rig. Circle T (true) or F (false) next to each statement.

- 1** The crown block is in the centre of the derrick. (T / F)
- 2** The travelling block is below the crown block. (T / F)
- 3** The swivel is between the kelly and the turntable. (T / F)
- 4** The cable moves diagonally downwards from the winch. (T / F)
- 5** The hook on the travelling block does not rotate. (T / F)
- 6** The turntable moves vertically downwards. (T / F)



# The circulation system in an oil rig



**2** Read this text and label items A – I on the diagram in 1. Use some of the words in italics in the text.

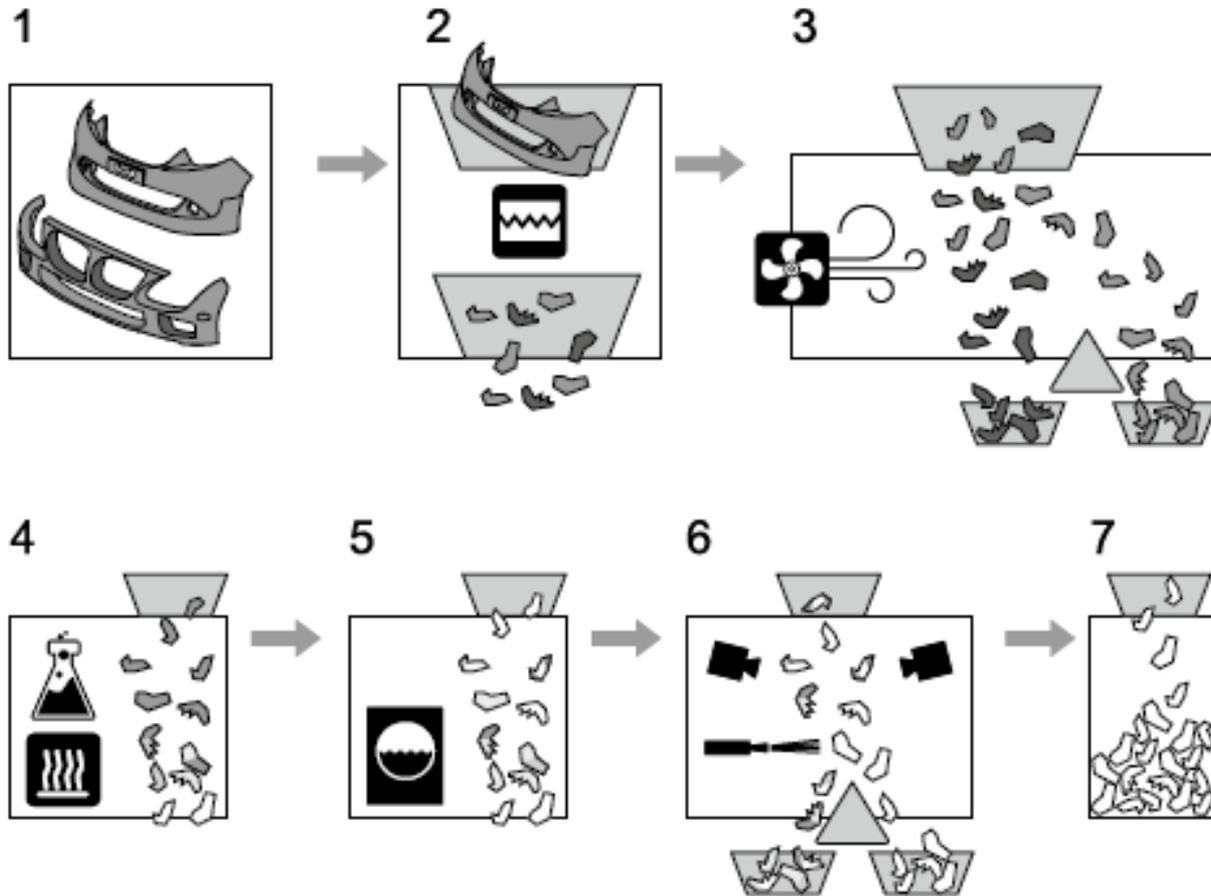
## **The circulation system**

The circulation system cleans out the well. It pumps a special liquid (called *drilling fluid* or *drilling mud*) down the drill string into the well hole. This liquid picks up pieces of rock (*rock cuttings*) and carries them up the well hole and out of the well.

This is how the system works. The *mud pump* sucks the drilling fluid from large open tanks (called *mud pits*) and pumps it through the *stand pipe* and *the rotary hose*. The fluid then enters the kelly through a hole in the swivel. The fluid then moves through the kelly and the drill string to the drill bit. Then the mud flows out of the drill bit and around the bottom of the well. It collects the rock cuttings and carries them up through the *annulus* (the space between the drill string and the casing). At the top of the annulus, the mud and cuttings leave the well through the *mud return line* (or pipe).

Now the mud flows into the *shaker*. This moves quickly from side to side. The fluid flows through the small holes in the shaker, but the large rock cuttings stay on the shaker. The fluid then flows back into the mud pits, and the large cuttings slide down the *shale slide* into the *reserve pit*.

5 Match the descriptions to the relevant stage in the process.



a remove paint

b wash pellets

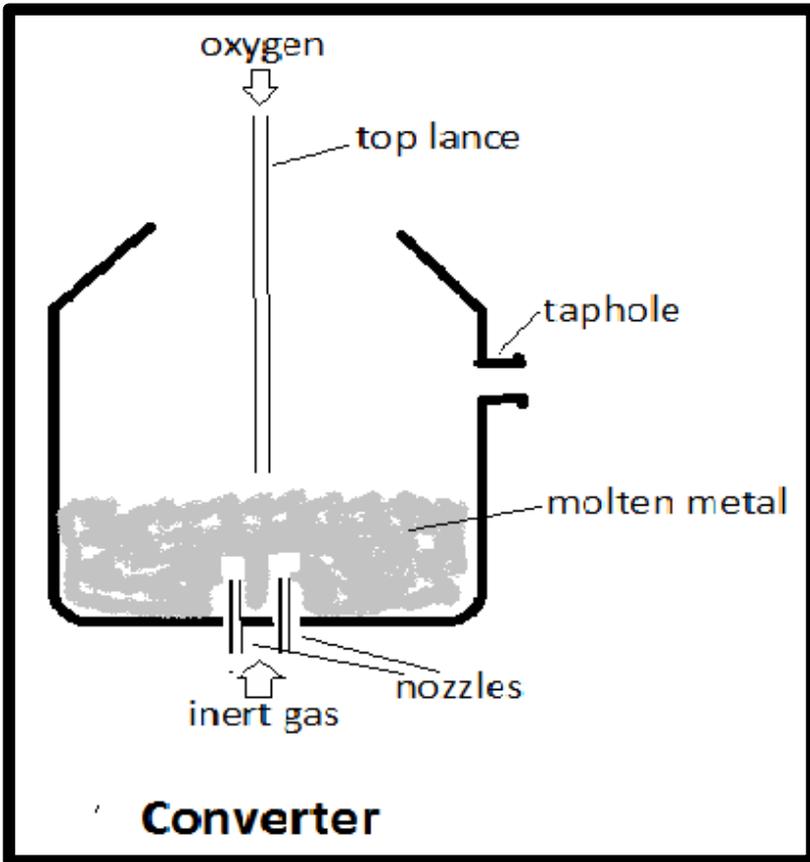
c dismantle by hand

d collect clean pellets

e crush bumpers

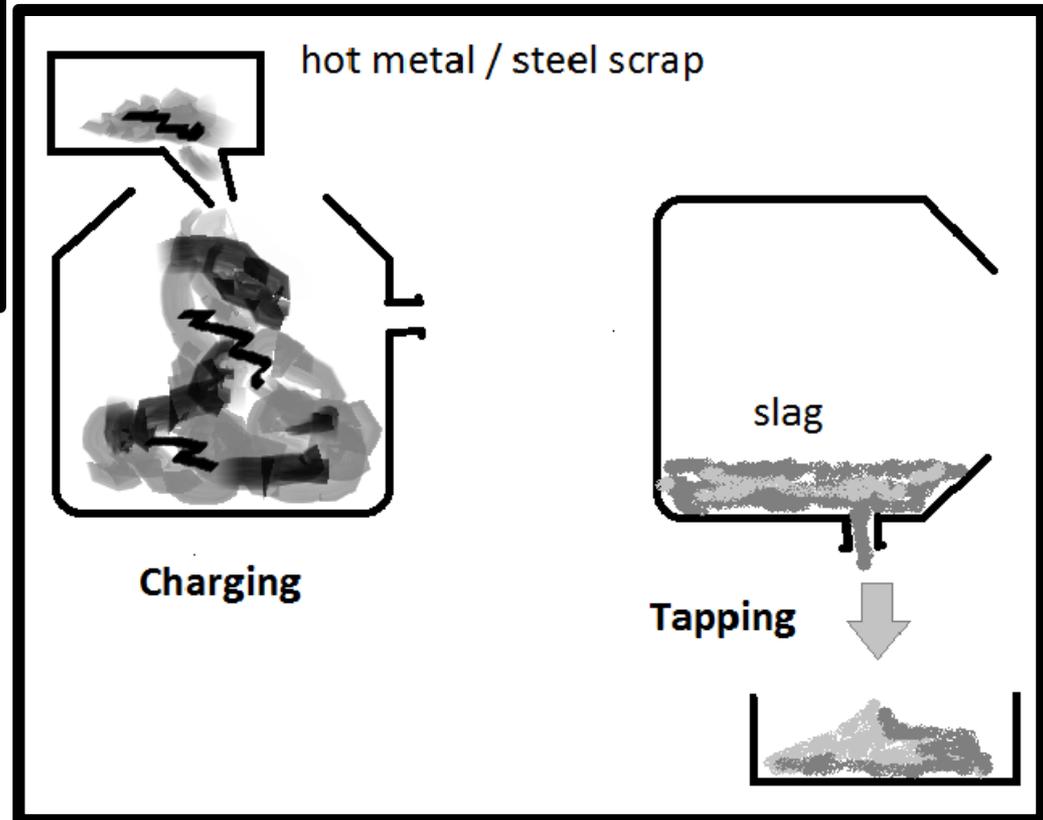
f optically sort (paint/no paint)

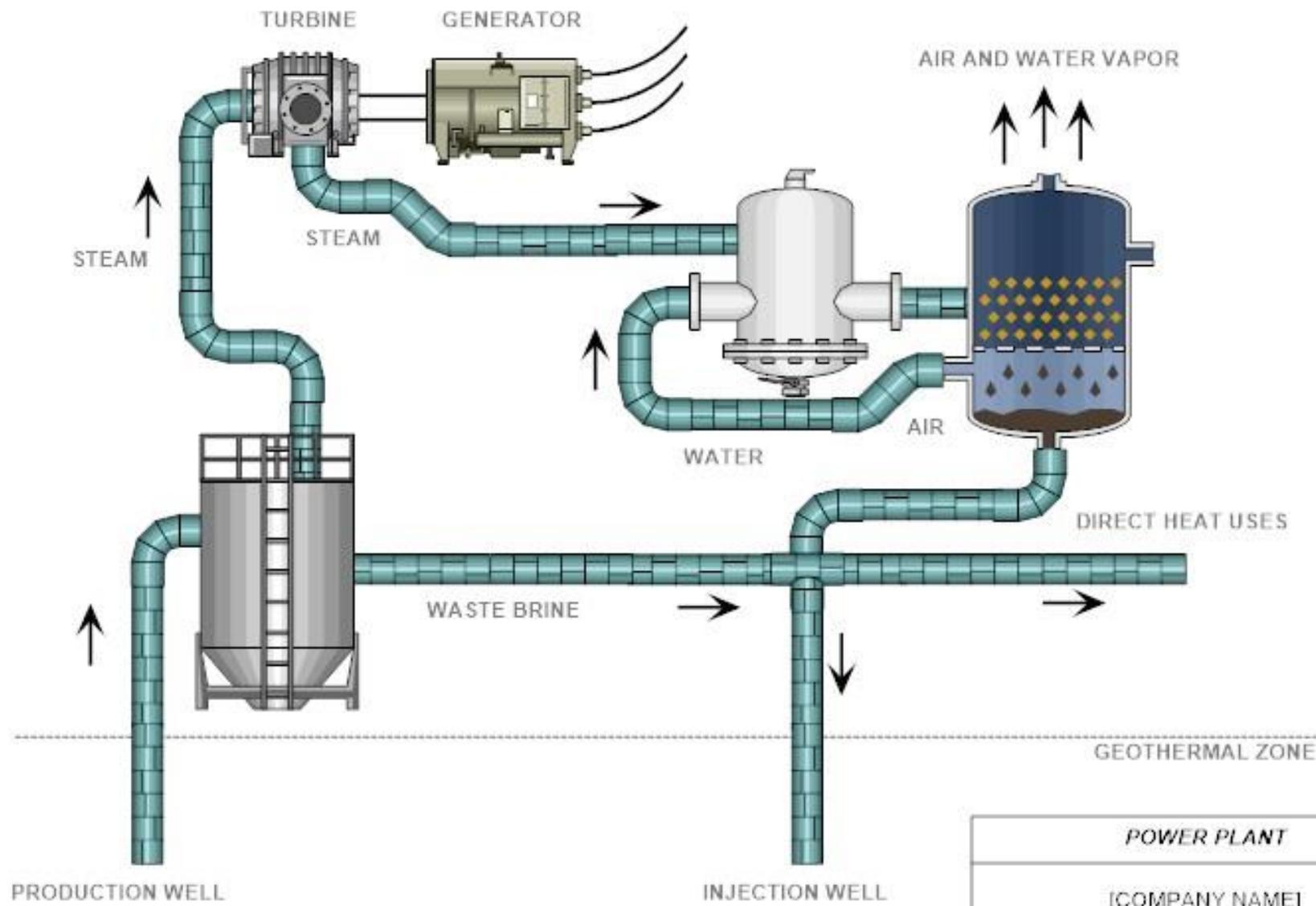
g separate into metal/non-metal



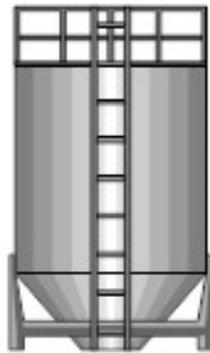
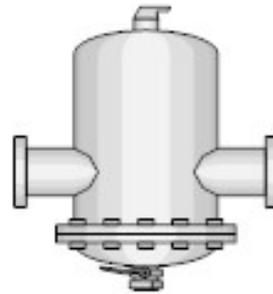
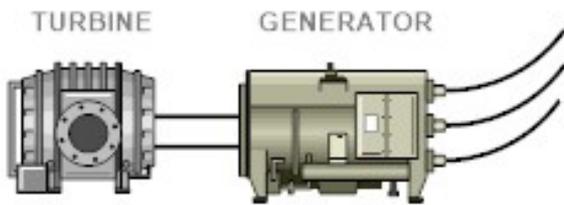
IT company – these materials were developed for a group of German programmers working on software for a steel mill in Korea.

Here are some in-house materials I designed – can you guess the type of company the students came from?





<i>POWER PLANT</i>			
[COMPANY NAME]			
DRAWN	CHECKED	DATE	DRAWING NO.



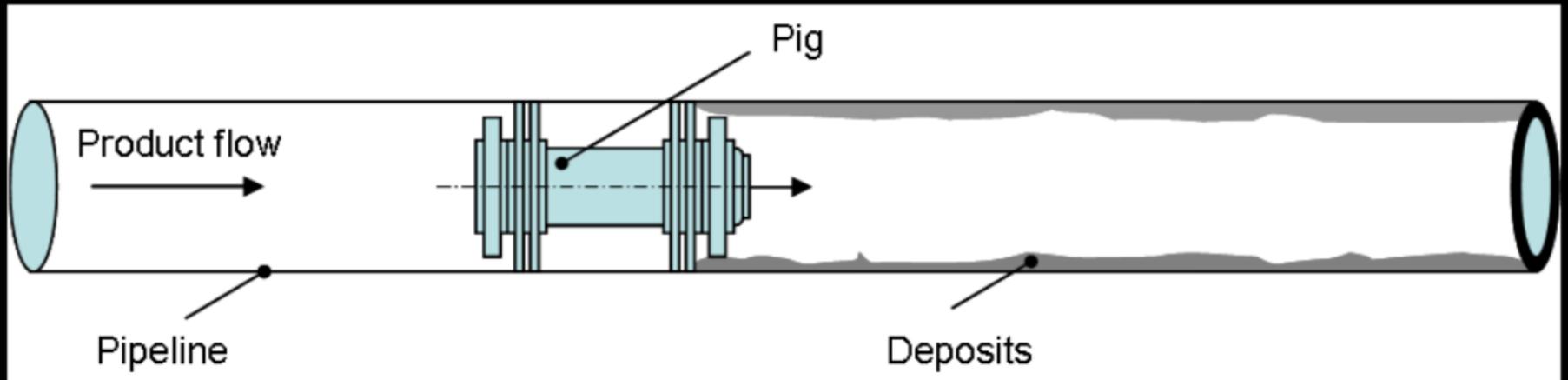
WASTE BRINE

GEOTHERMAL ZONE

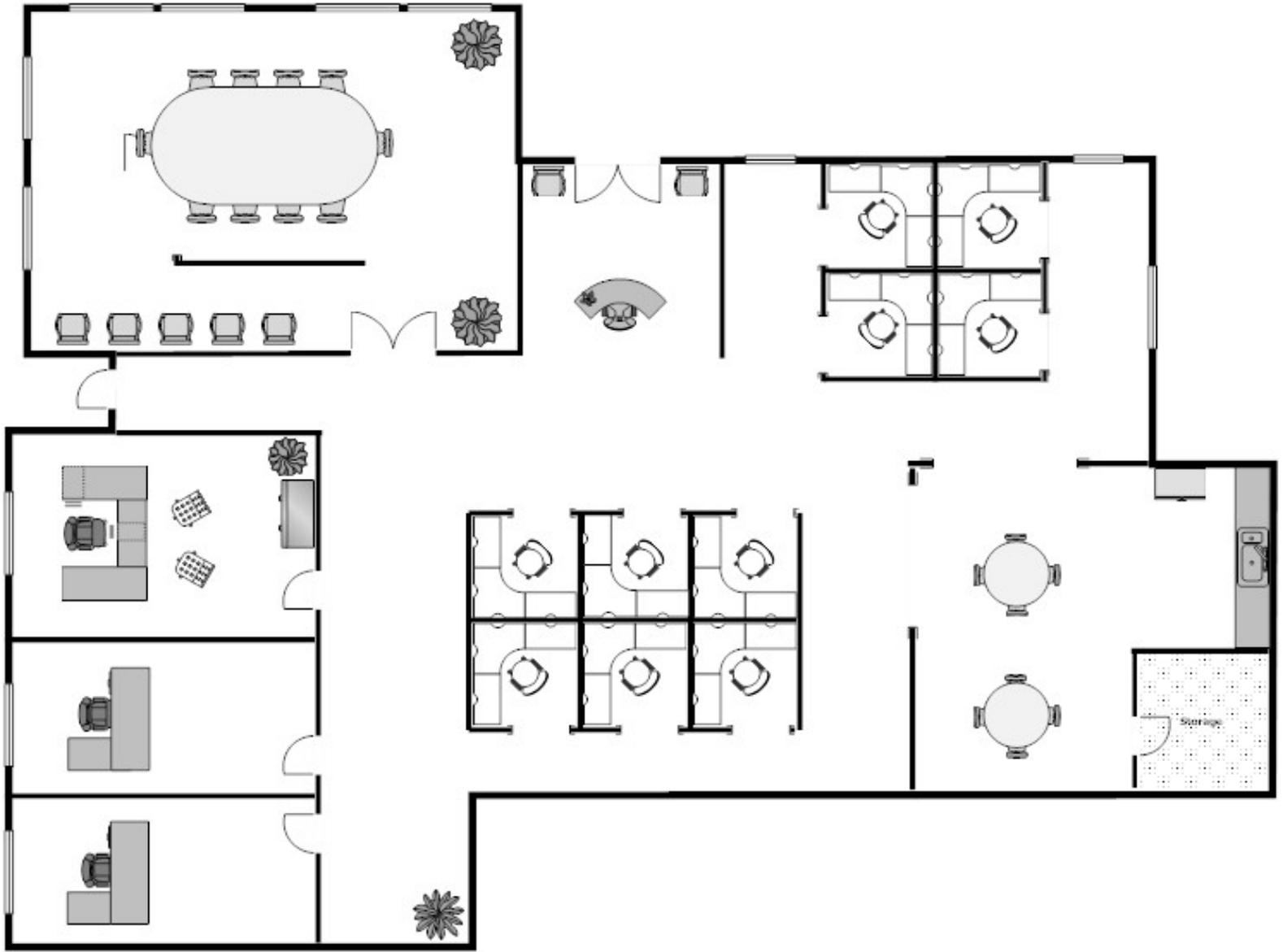
INJECTION WELL

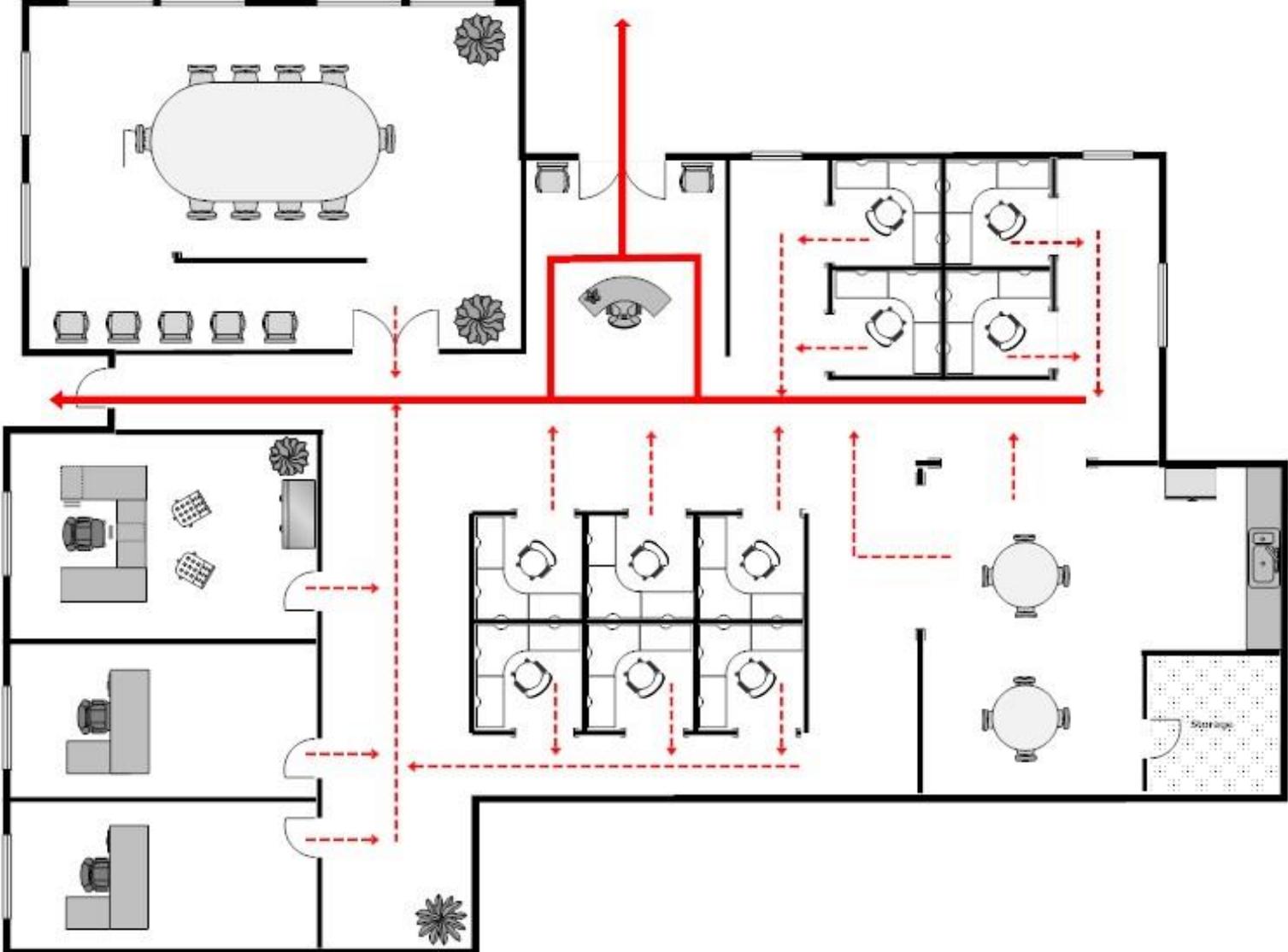
<i>POWER PLANT</i>			
[COMPANY NAME]			
DRAWN	CHECKED	DATE	DRAWING NO.

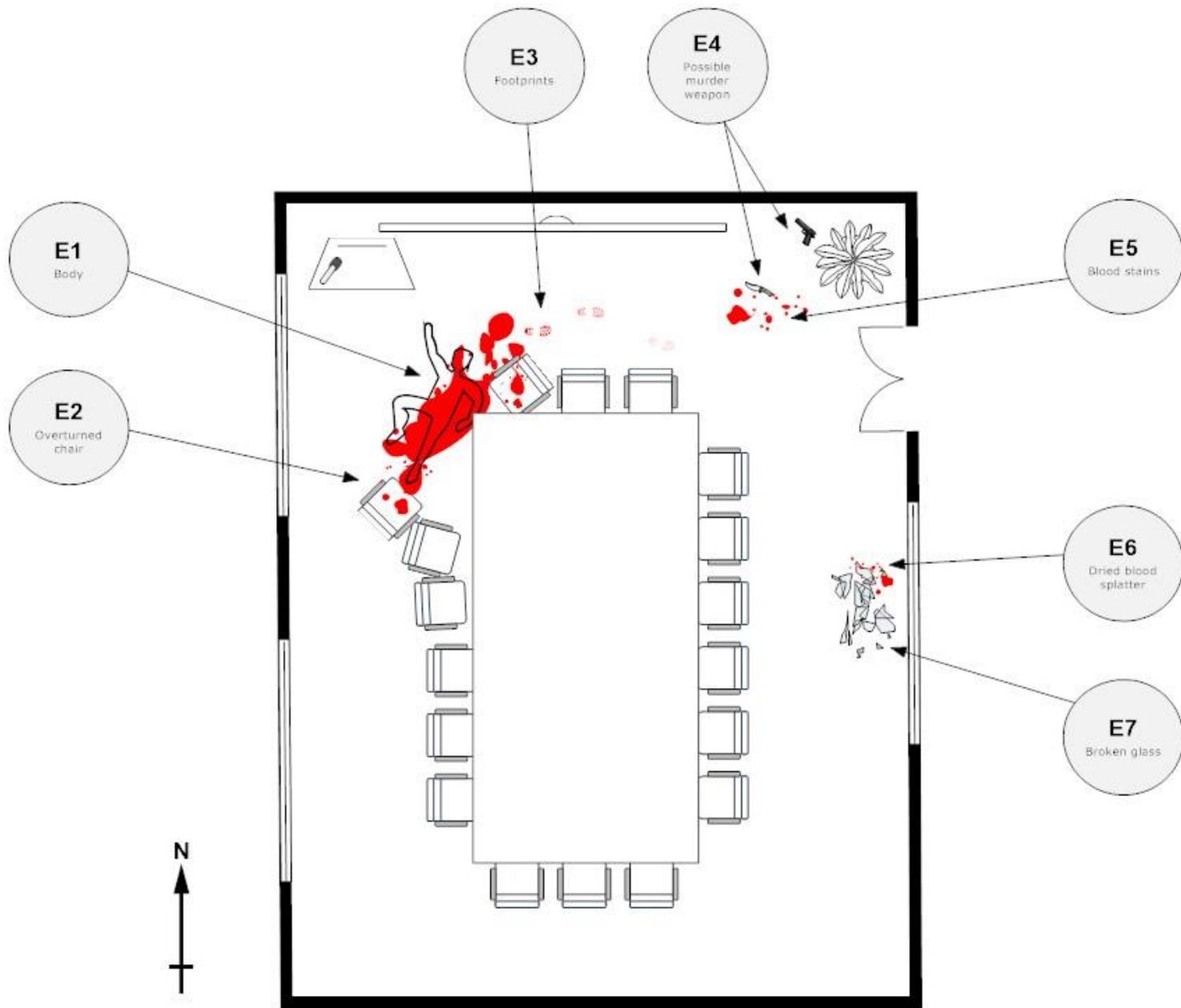
# How things work

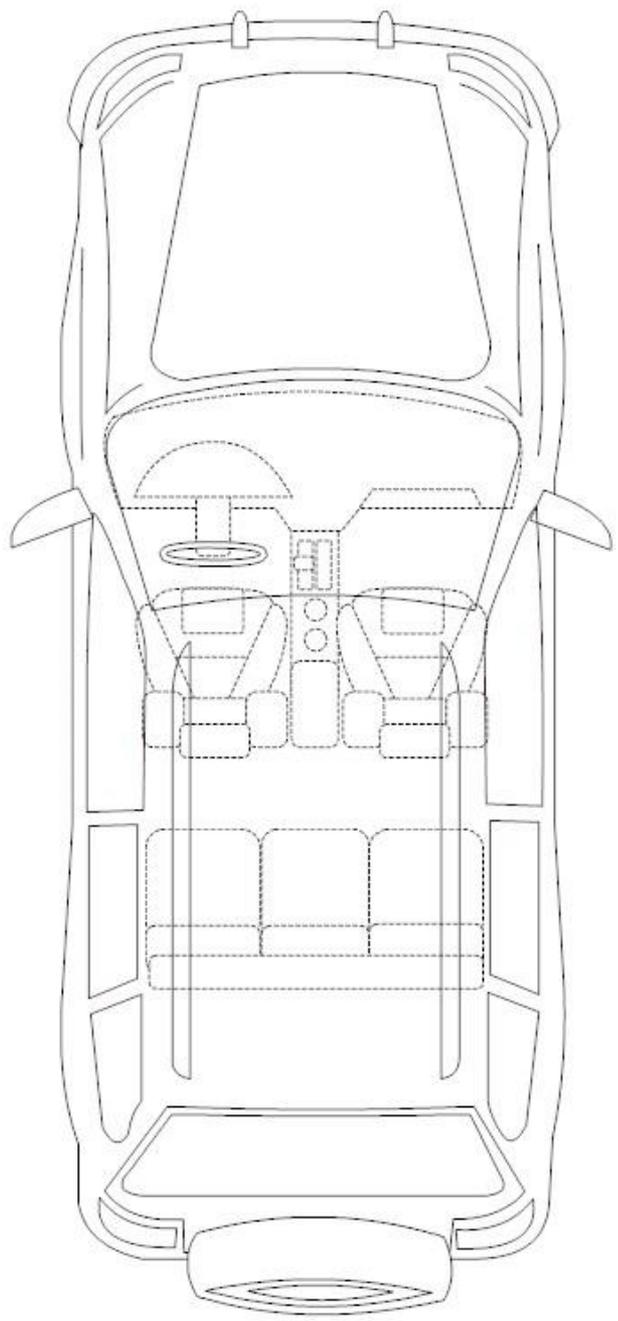


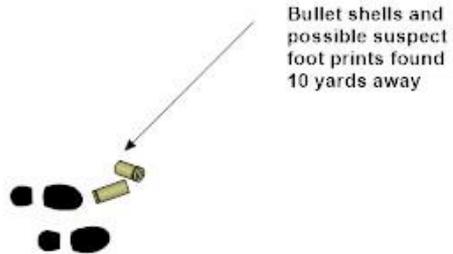
# Role-plays and simulations





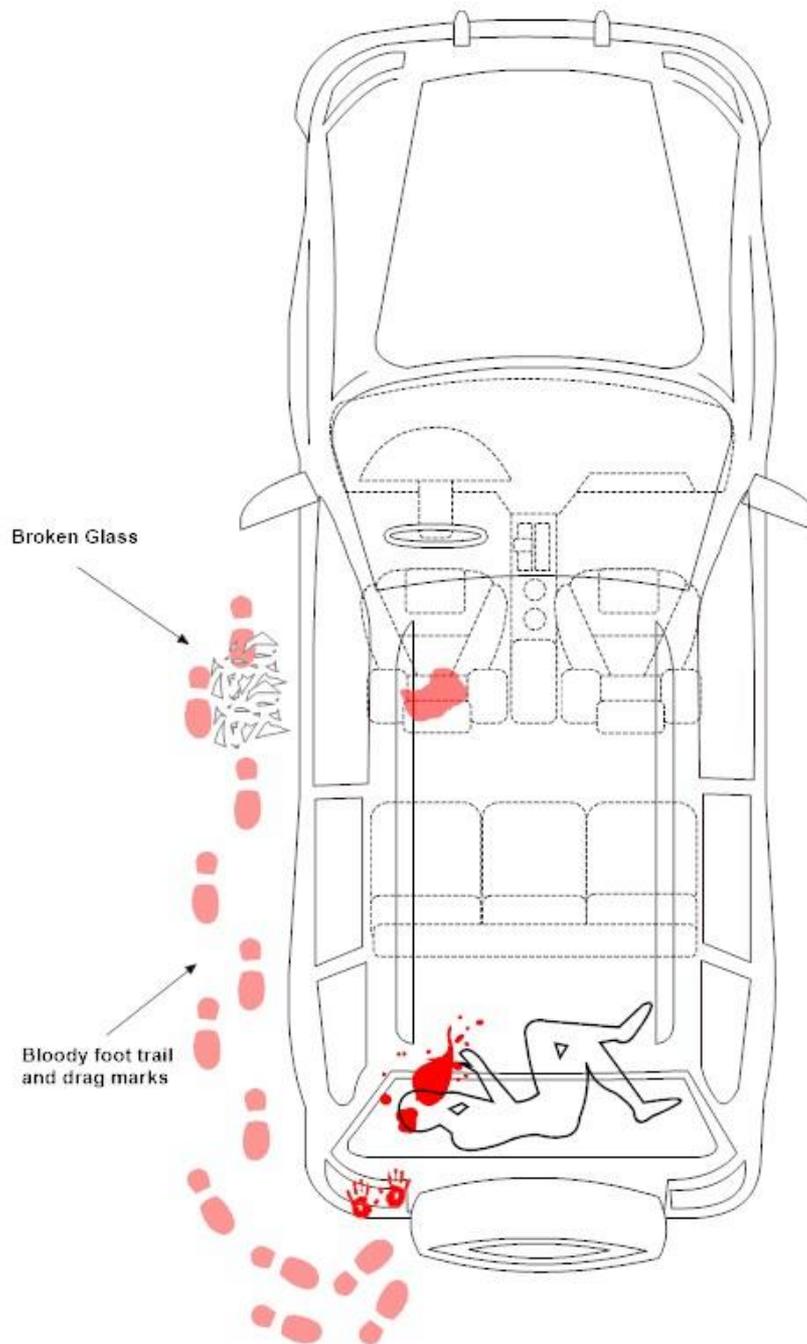




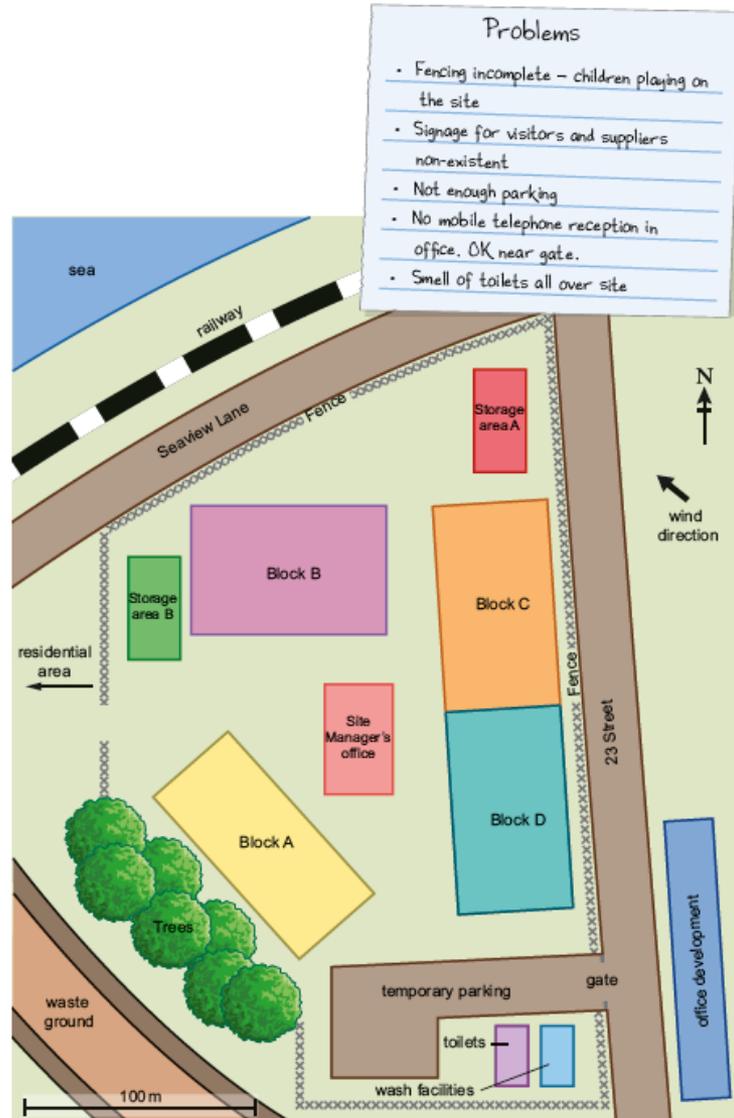


Case #: 975-85-7261  
Offense: Death Investigation  
Scene Portrayed: 4-Door Explorer  
Location/Address: 672 Maple Drive  
Victim: Douglas M. Tiller  
Time & Date of Death: 1315 12 March 06  
Prepared by:  
SA Tim Donalds  
14 March 06

Verified by: SQT Jessie C. Brown



**Speaking 6** Look at this plan of a construction site and read the list of problems with it. Discuss improvements with a partner, then tell the class your ideas.



**7** Many construction sites have similar problems due to lack of space and compromises are made. Think of examples from construction sites you know. Work in small groups and tell your group about them.

# Exploiting technical drawings

- Listen and label / read and label / label.
- Use labelled diagram to focus on technical language or other lexis (e.g. prepositions of place, dimensions)
- Interpret the drawing (e.g. ask comprehension questions based on a drawing, not a text)
- Use sketches to share ideas / collaborate
- Discuss processes / changes / faults
- Discuss incidents / accidents

Expert insider

Front / back stage

# Exploiting technical drawings

Evan Frendo

QTY	QTY - 001	QTY - 001	QTY
Quantity	Part ID / number	Fabrication instructions	Material
MCD	A		Drawn by: [Name]
	B		Controlled by: [Name]
	C		Date: [Date]
	D		Completed: [Date]
	E		Controlled: [Date]
PART NAME		Project number: 123	