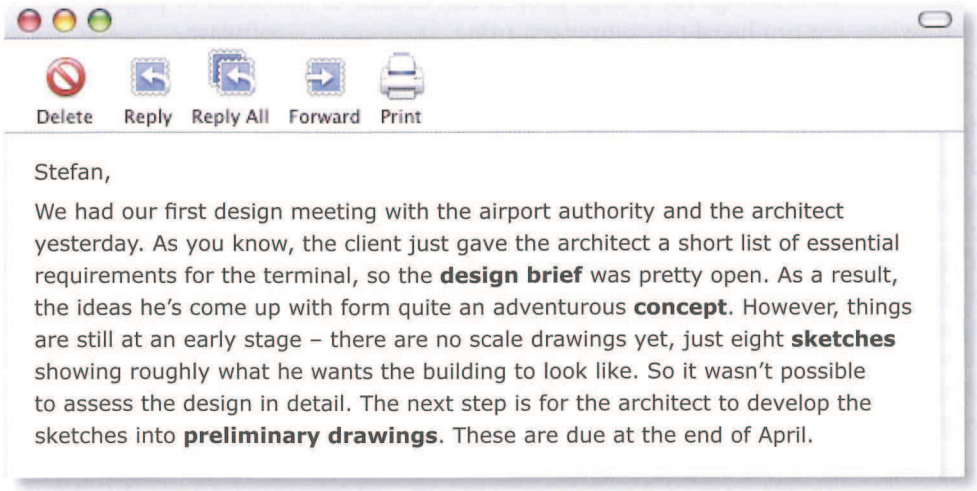
2 Design development

A Initial design phase

A structural engineer from a firm of consulting engineers has sent an email to a more senior colleague, with an update on a project for a new airport terminal.



B Collaborative development

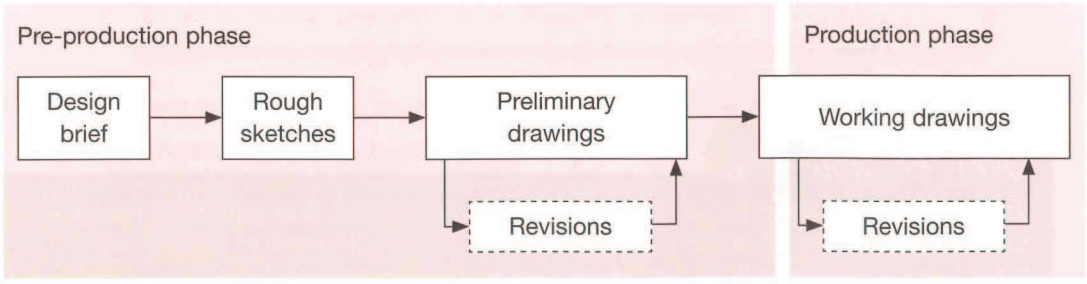
When a design team consists of engineers and consultants from different organizations, the design development process needs to be carefully co-ordinated.

Before the first **draft** (version) of a drawing is sent to members of the team, a decision is made about who needs a copy. Sometimes, a drawing will only be **issued to** certain specialists in the team. Sometimes, it will be **circulated to** all the team members.

After team members have received a drawing, they can **comment on** it, and may ask for the design to be changed. Following these **comments**, the drawing will be **revised** – that is, drawn again with the requested changes made to it. Every drawing is numbered, and each time a drawing is **amended** (revised), the letter next to the drawing number is changed. Therefore drawing 110A, after a **revision**, becomes 110B. When **revision B** is issued, it becomes the **current drawing**, and A is **superseded**. With each new revision, written **notes** are added to the drawing. These describe the **amendments** that have been made.

When engineers revise drawings during the early stages of the design process, they may have to **go back to the drawing board** (start again), and **redesign** concepts completely. For later revisions, the design should only need to be **refined** slightly.

After a preliminary drawing has been finally **approved** (accepted), a senior engineer can **sign off** (authorize) the drawing as a **working drawing** – that is, one that the production or construction team can **work to**. However, this does not always mean the drawing will be final. Often, working drawings go through more revisions to resolve problems during production.



2.1 Find words in A opposite with the following meanings.

1 a description of design objectives
2 a rough, hand-drawn illustration
3 an initial diagram, requiring further development
4 an overall design idea

2.2 Put the words in the box into the table to make groups of verbs with similar meanings. Look at B opposite to help you.

amend	circulate	redesign	revise	supersede
approve	issue	refine	sign off	

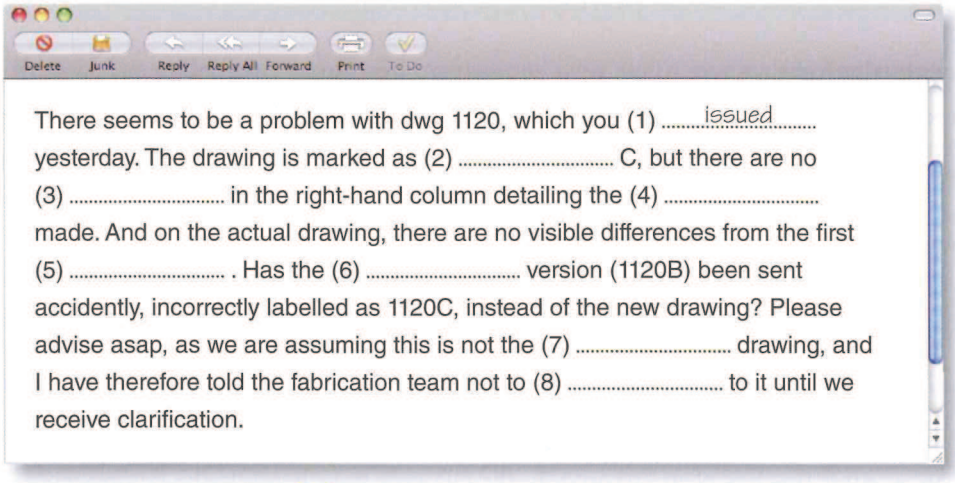
1	2	3	4
change improve	send out distribute	accept agree	replace

2.3 Choose the correct words from the brackets to complete the sentences about drawings. Look at B opposite to help you.

1 Has the drawing been revised, or is this the first (draft/refine)?
2 This has been superseded. It's not the (current/preliminary) drawing.
3 Has this drawing been signed off? Can they (circulate/work) to it in the factory?
4 I still need to (comment/note) on the latest set of drawings.
5 Construction can't start until the first (current/working) drawings have been issued.

2.4 Complete the email using the correct forms of the words in the box. Look at B opposite to help you. The first one has been done for you.

amendment	current	draft	issue	note	revision	supersede	work



There seems to be a problem with dwg 1120, which you (1) ..issued.. yesterday. The drawing is marked as (2) ..... C, but there are no (3) ..... in the right-hand column detailing the (4) ..... made. And on the actual drawing, there are no visible differences from the first (5) ..... . Has the (6) ..... version (1120B) been sent accidently, incorrectly labelled as 1120C, instead of the new drawing? Please advise asap, as we are assuming this is not the (7) ..... drawing, and I have therefore told the fabrication team not to (8) ..... to it until we receive clarification.

Over to you

Think about design development on a project you have worked on, or on a type of project you know about. Describe the key stages from the design brief to the issue and ongoing revision of working drawings. Say how designers, consultants and production teams are involved at each stage of the process, and explain what procedures are used.