Fig. 7.11d

(4) A visual light ray is brought from the two corners of the plan to the spectator, as shown in Fig. 7.11c. Where these light rays pierce the picture plane they are dropped down to the perspective finding the front left edge and the back corner.

(5) The elevation of the object is built up using the height line as one of its edges as shown in Fig. 7.11d.

(6) What we have done is lengthened the object until it hits the picture plane. **Objects in the picture plane show their true sizes.** That is why we can draw the elevation full size on the ground line. The corners of this elevation are vanished back to the vanishing point.
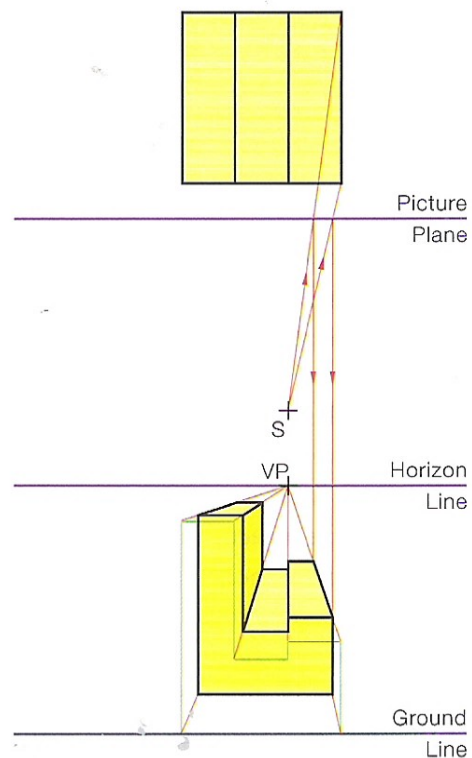
(7) Corners of the perspective are located by using rays of light as in Step 4. Rays are brought from the two corners on the right. Where they pass through the picture plane they are projected into the perspective view as shown in Fig. 7.11e.

Note: In the top half of the drawing we are looking at the plan of the object, the plan of the picture plane (we are seeing it edge on) and we are seeing the plan of the spectator. In the lower half of the drawing we are seeing through the spectator's eyes and looking at the picture plane. The ground line is the line of intersection between the picture plane and the horizontal plane. The horizon line is at the spectator's eye level. The perspective itself is the projection of an image of the object, onto the picture plane, using rays of light.

Fig. 7.11e

Method of constructing a two-point perspective.

Elevation

93

45

Plan

7

7

50

100

60° S

Fig. 7.12a

The following series of diagrams illustrate the process of producing a two point perspective of an object.

Given the plan and elevation of an object (Fig. 7.12a). Also given the direction of the spectator and its distance from the corner. The spectator is 70 mm above the ground.

We have not been given the picture plane's position so our first step is to locate it in plan. **The picture plane is always perpendicular to the central line of sight**. To get a balanced perspective we will have the spectator view toward the centre of the object.
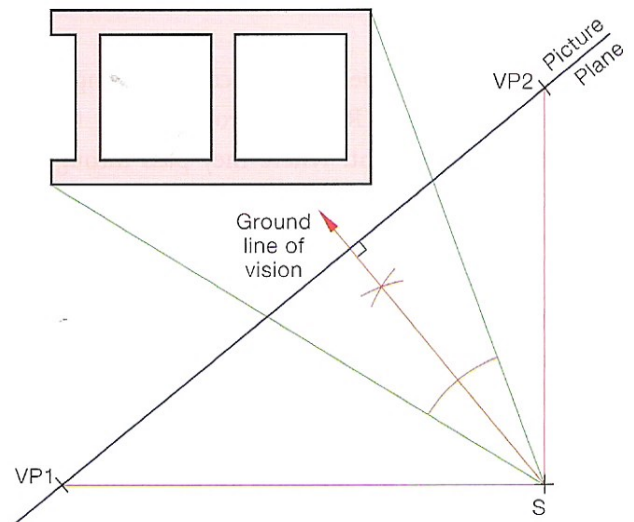

VP2   Picture Plane

Ground line of vision

VP1

S

Fig. 7.12b

(1) The extreme corners of the plan are joined back to the spectator. The angle formed is bisected giving the centre of vision as shown in Fig. 7.12b. The picture plane is now drawn.

(2) The location of the vanishing points on the picture plane is the next step. The vanishing points are found by drawing lines from the spectator parallel to the principal axes of the object and finding their piercing points in the picture plane.

(3) The ground line and horizon line are now drawn parallel to the picture plane. The spacing between them is usually given in the question.

(4) The two vanishing points located on the picture plane are now projected onto the horizon line.

(5) To start the perspective we need a height line. One edge ab is extended to hit the picture plane at c. This point c is projected down to the ground line. The height of the object is measured on this line.

(6) The top and bottom of the height line
are vanished back to VP1. VP1 is used
because edge ab and all edges parallel
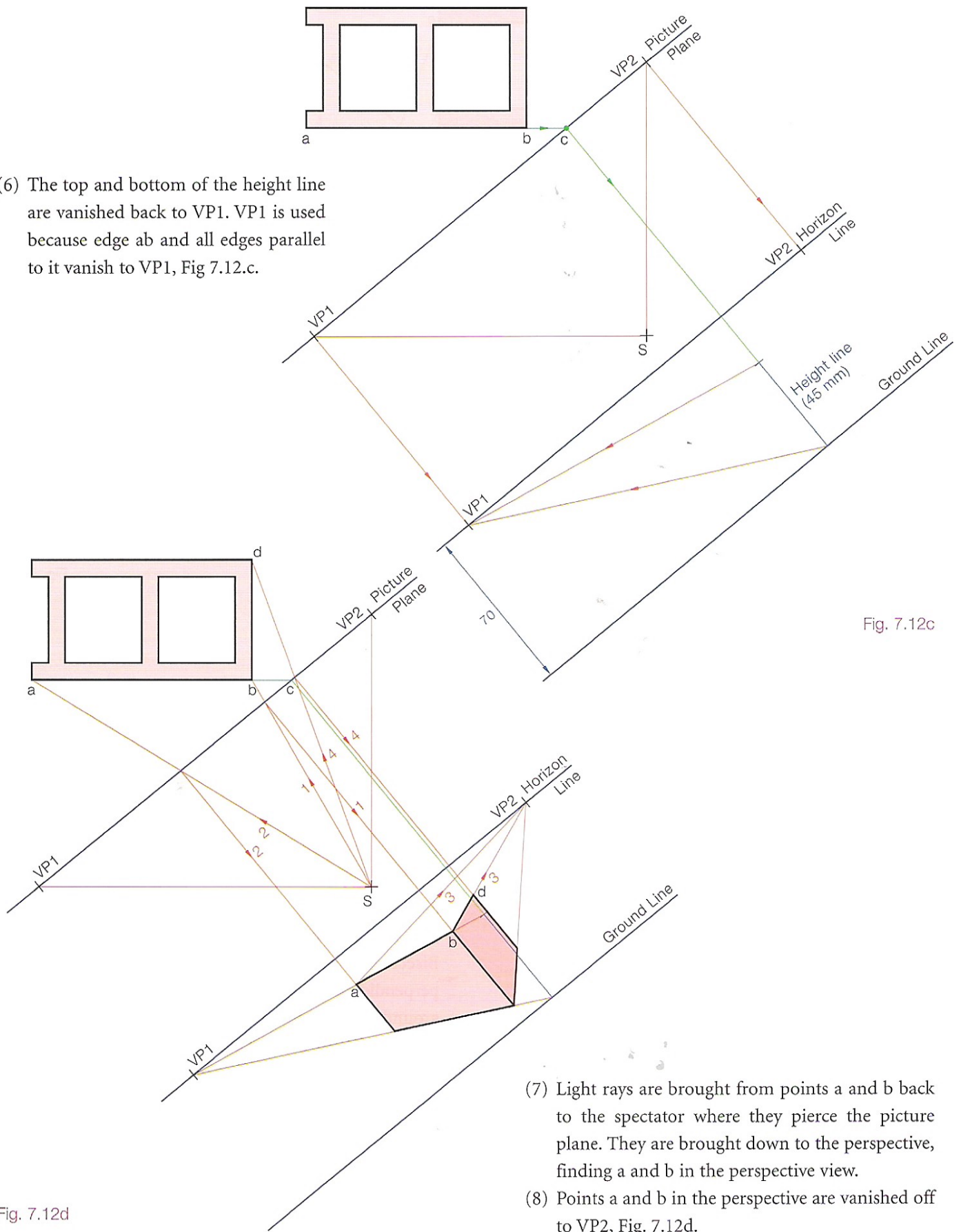to it vanish to VP1, Fig 7.12.c.

Fig. 7.12c

Fig. 7.12d

(7) Light rays are brought from points a and b back
to the spectator where they pierce the picture
plane. They are brought down to the perspective,
finding a and b in the perspective view.

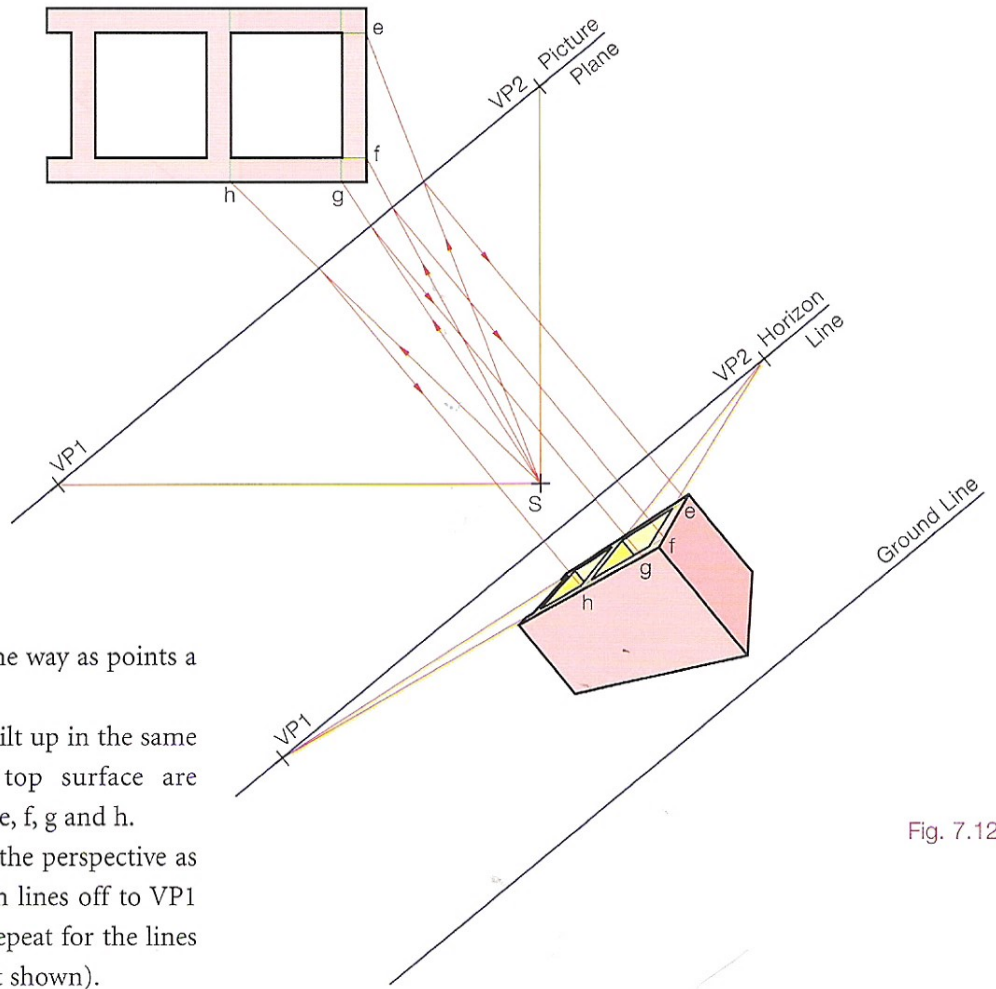(8) Points a and b in the perspective are vanished off
to VP2, Fig. 7.12d.

Fig. 7.12e

(9) Point d is found in the same way as points a and b.

(10) The top of the block is built up in the same way. The lines on the top surface are extended in plan to points e, f, g and h.

(11) Find these four points in the perspective as shown in Fig. 7.12e. Vanish lines off to VP1 and VP2 as appropriate. Repeat for the lines further in the distance (not shown).
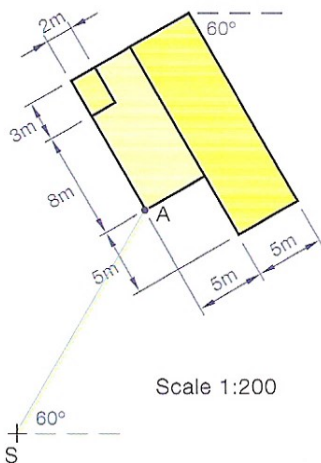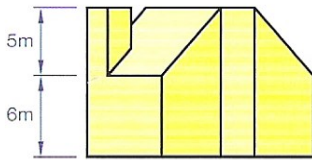

Scale 1:200

Fig. 7.13a

Given the plan and elevation of a building. Draw a perspective view of the building when the position of the spectator is 19 m from the corner A, the picture plane touches the corner A and the horizon line is 5 m above the ground line.

Step 1

Join a light ray from the extreme corners to the spectator. Bisect the angle formed. Draw the picture plane perpendicular to this central line of vision. Draw the ground line and the horizon line parallel to the picture plane and 5 m apart. Locate VP1 and VP2 as before. Corner A is in the picture plane and so will be seen as a true length in the perspective. Using corner A as a height line mark off 6 m and 11 m. Vanish to VP1 and complete the side of the building as shown in Fig. 7.13b.

Step 2

The end of the roof is constructed next by vanishing to VP2. The end of the ridge in the distance will be hidden behind the chimney. The base of the chimney is constructed as shown in Fig. 7.13c.
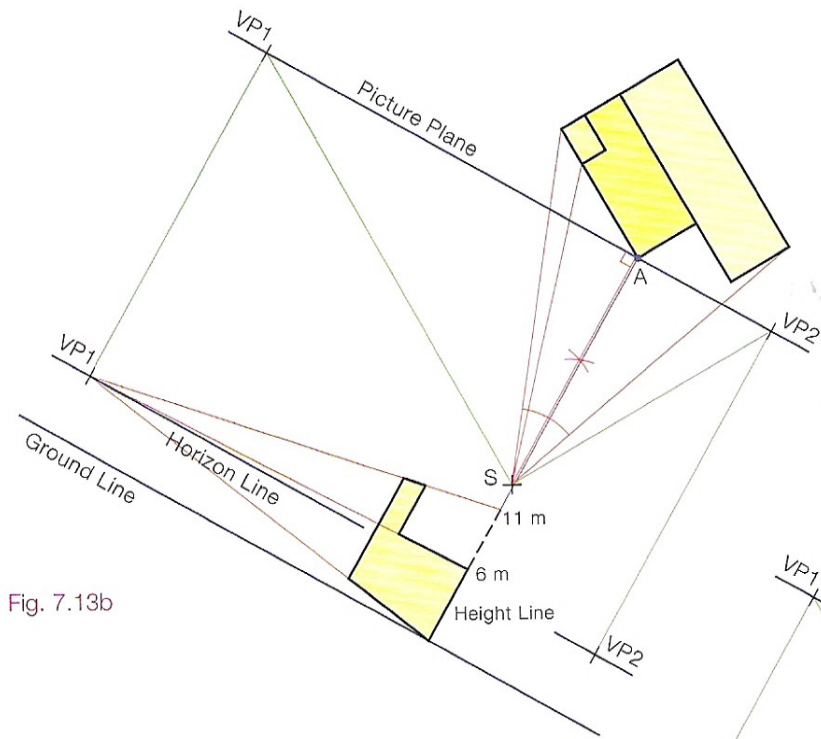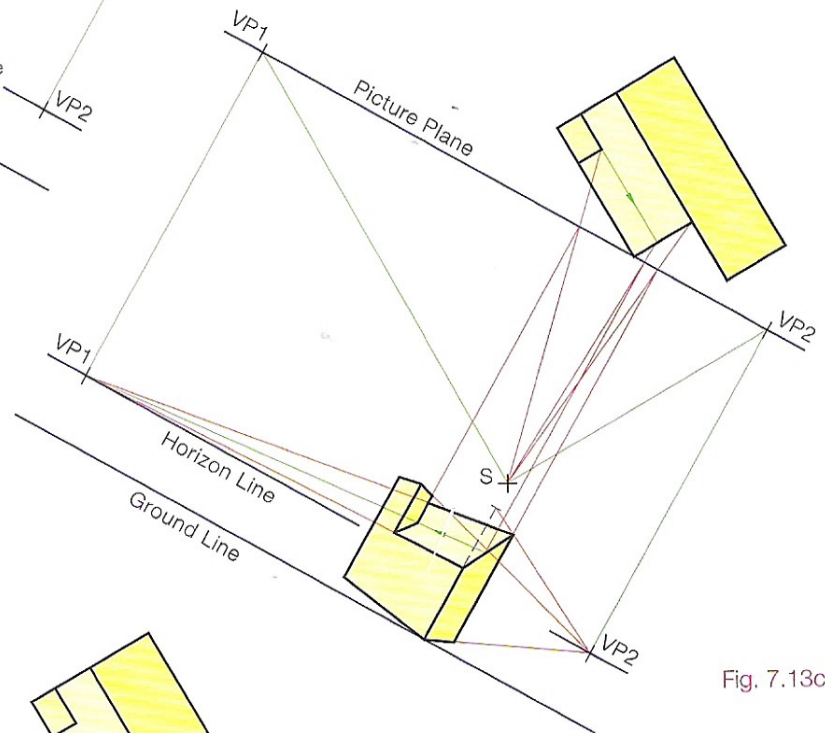
Fig. 7.13b

Fig. 7.13c

Step 3

The other part of the building is built up as shown in Fig. 7.13d.

The only difficulty is the 6 m wall at the back at b. The quickest way to get the height of this corner is to get a height line. Extend one of the edges passing through corner b until it hits the picture plane at c. Drop c down to the perspective and use as a height line as shown.
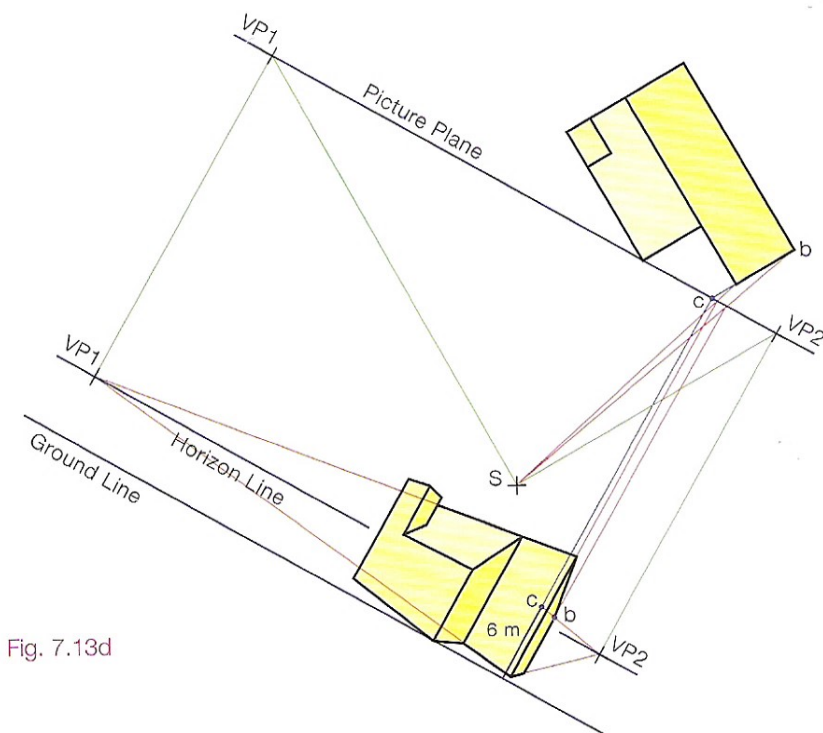
Fig. 7.13d

Given the plan and elevation of a building, Fig. 7.14a. Make a perspective view of the building when the spectator is 10 m from the corner A, the picture plane touches corner A and the horizon line is 8 m above the ground line.

Fig. 7.14a

(1) Join the extreme corners of the plan back to the spectator. Bisect the resulting angle giving the central line of vision. Draw the picture plane parallel to this.

(2) Find VP1 and VP2 on the picture plane and drop to the horizon.

(3) Start the perspective at corner A which is in the picture plane and therefore is a true length. Use this corner as a height line.
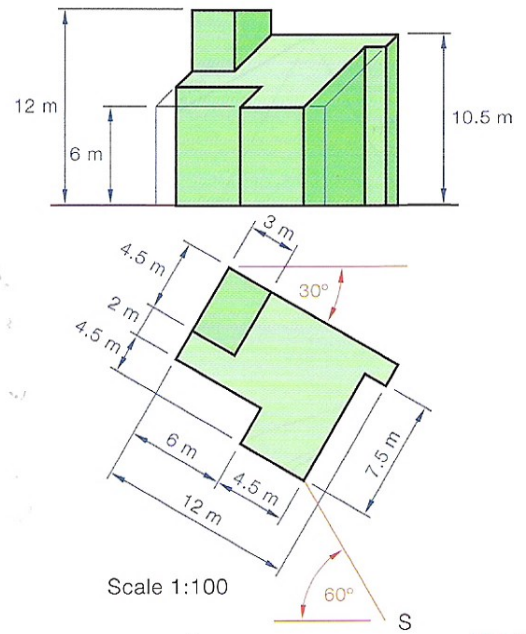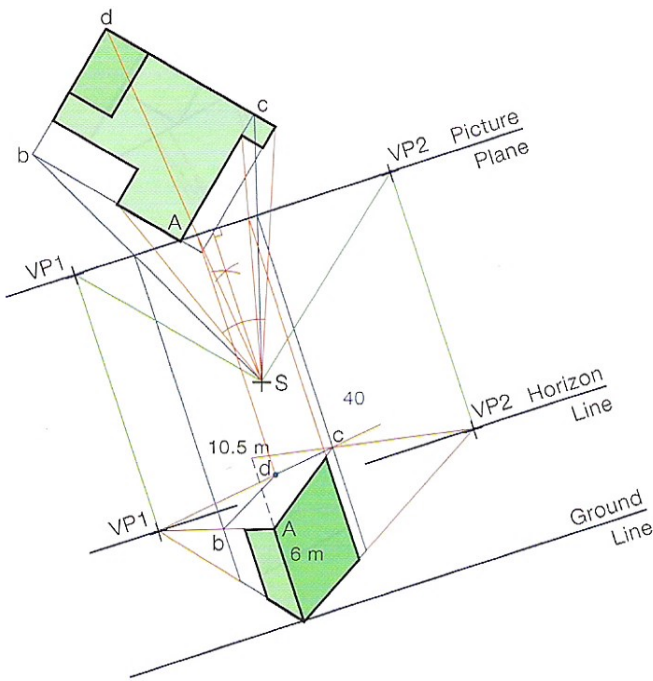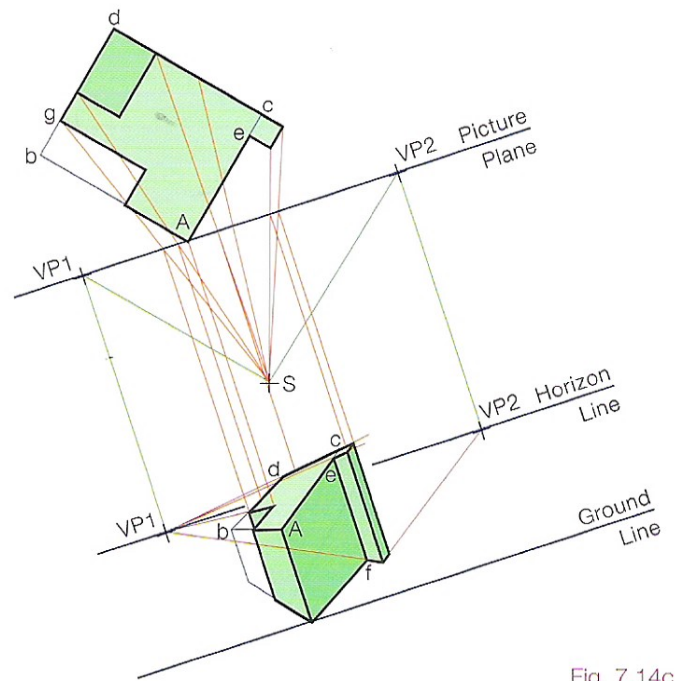

Fig. 7.14b

Fig. 7.14c

(4) Find the corners A, b, c and d as shown in Fig. 7.14b.

(5) Lines are projected from VP1 through points c, e and f in the perspective, as shown in Fig. 7.14c. The small protrusion from the building can be completed.

(6) Point g is found on edge bd in the perspective. A line produced from VP1 through g will allow us to complete another section of the perspective.