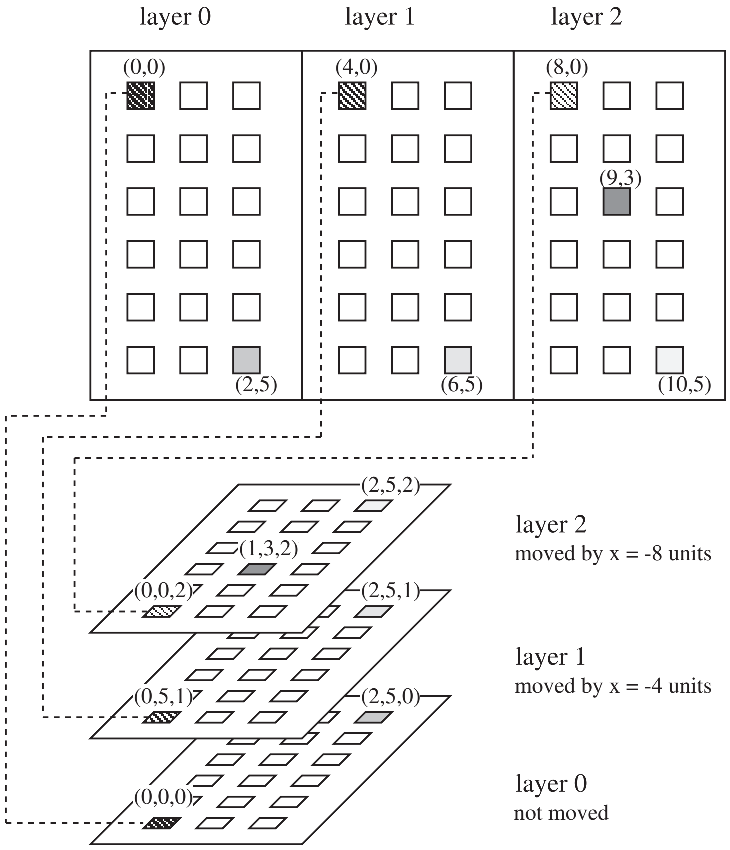

Figure 11.1: Layers in the 2D- and 3D-display

The event of 3D-creation is easily controlled by rotating the network in the 3D display by 90° to be able to see the network sideways. It may be useful to display the z-coordinates in the XGUI display (see 11.2.3.4).

The user is advised to create a 3D network first as a wire-frame model without links for much faster screen display.

11.2.3.2 Assigning a new z-Coordinate

The desired new z-coordinate may be entered in the setup panel of the 2D-display, or in the z-value panel of the 3D-control panel. The latter is more convenient, since this panel is always visible. Values between -32768 and +32767 are legal.

With the mouse all units are selected which are to receive the new z-coordinate.

With the key sequence `U 3 Z` (for **U**nits **3**d **Z**) the units are assigned the new value.

Afterwards all units are deselected.

11.2.3.3 Moving a z-Plane

From the plane to be moved, one unit is selected as a reference unit in the 2D display. Then the mouse is moved to the unit in the base layer above which the selected unit is to be located after the move.

With the key sequence `U 3 M` (for **U**nits **3**d **M**ove) all units of the layer are moved to the current z-plane.

The right mouse button deselects the reference unit.

11.2.3.4 Displaying the z-Coordinates

The z-values of the different units can be displayed in the 2D-display. To do this, the user activates the setup panel of the 2D-display with the button `SETUP`. The button `SHOW`, next to the entry `units top` opens a menu where `z-value` allows the display of the values.

The z-values may also be displayed in the 3D-display. For this, the user selects in the 3D-control panel the buttons `UNITS`, then `TOP LABEL` or `BOTTOM LABEL` and finally `Z-VALUE`. (see also chapter 11.2.4.6)

11.2.3.5 Example Dialogue to Create a 3D-Network

The following example is to demonstrate the rearranging of a normal 2D network for three dimensional display. As example network, the letter classifier LETTERS.NET is used.

In the 2D-display, the network looks like in figure 11.2:

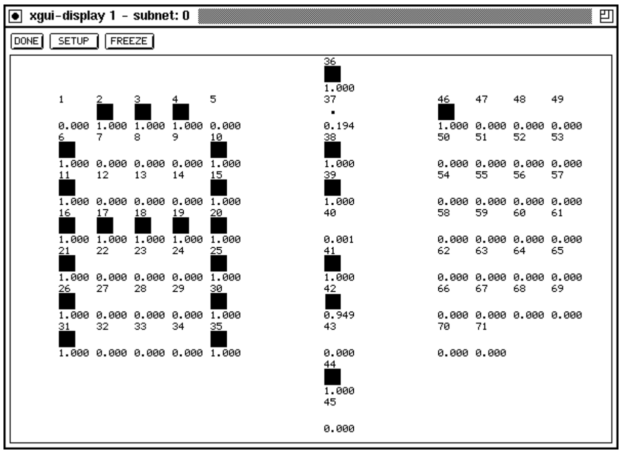

Figure 11.2: 2D-display

One scales the net with `scale` `-` in the transformation panel, then it looks like figure 11.3 (left). After a rotation with `rotate` `+` by 90° around the x-axis the network looks like figure 11.3 (right).

Now the middle layer is selected in the 2D-display (figure 11.4, left).

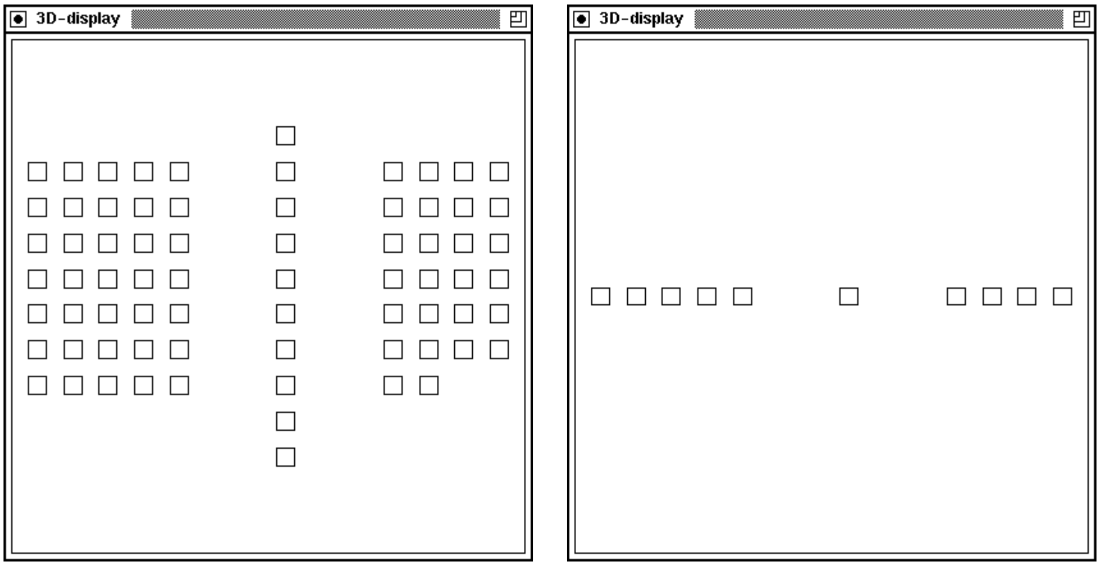

Figure 11.3: Scaled network (left) and network rotated by 90° (right)

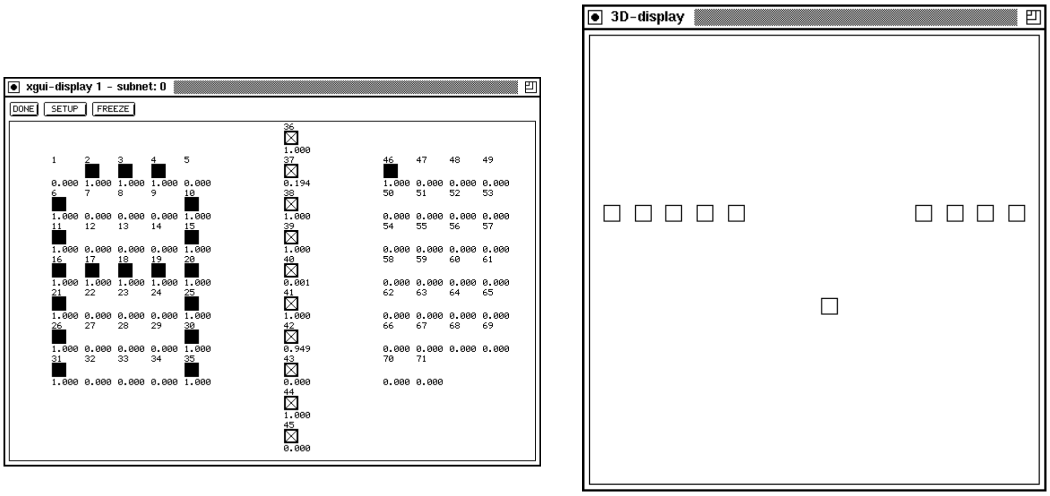

Figure 11.4: Selection of one layer (left) and assigning a z-value (right)

To assign the z-coordinate to the layer, the `z-value` entry in the 3D-control panel is set to three. Then one moves the mouse into the 2D-display and enters the key sequence "'`U 3 Z`"'. This is shown in figure 11.4 (right).

Figure 11.5: Selection of a reference unit (left) and moving a plane (right)

Now the reference unit must be selected (figure 11.5, left).

To move the units over the zero plane, the mouse is moved in the XGUI display to the position x=3, y=0 and the keys "'`U 3 M`"' are pressed. The result is displayed in figure 11.5 (right).

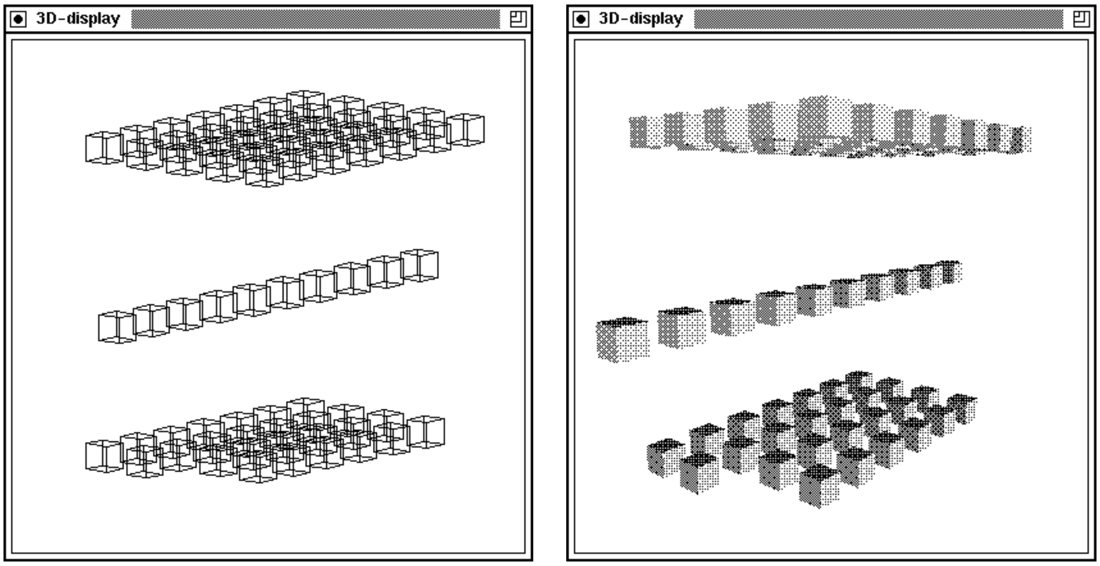

Figure 11.6: Wire-frame model in parallel projection (left) and solid model in central projection (right)