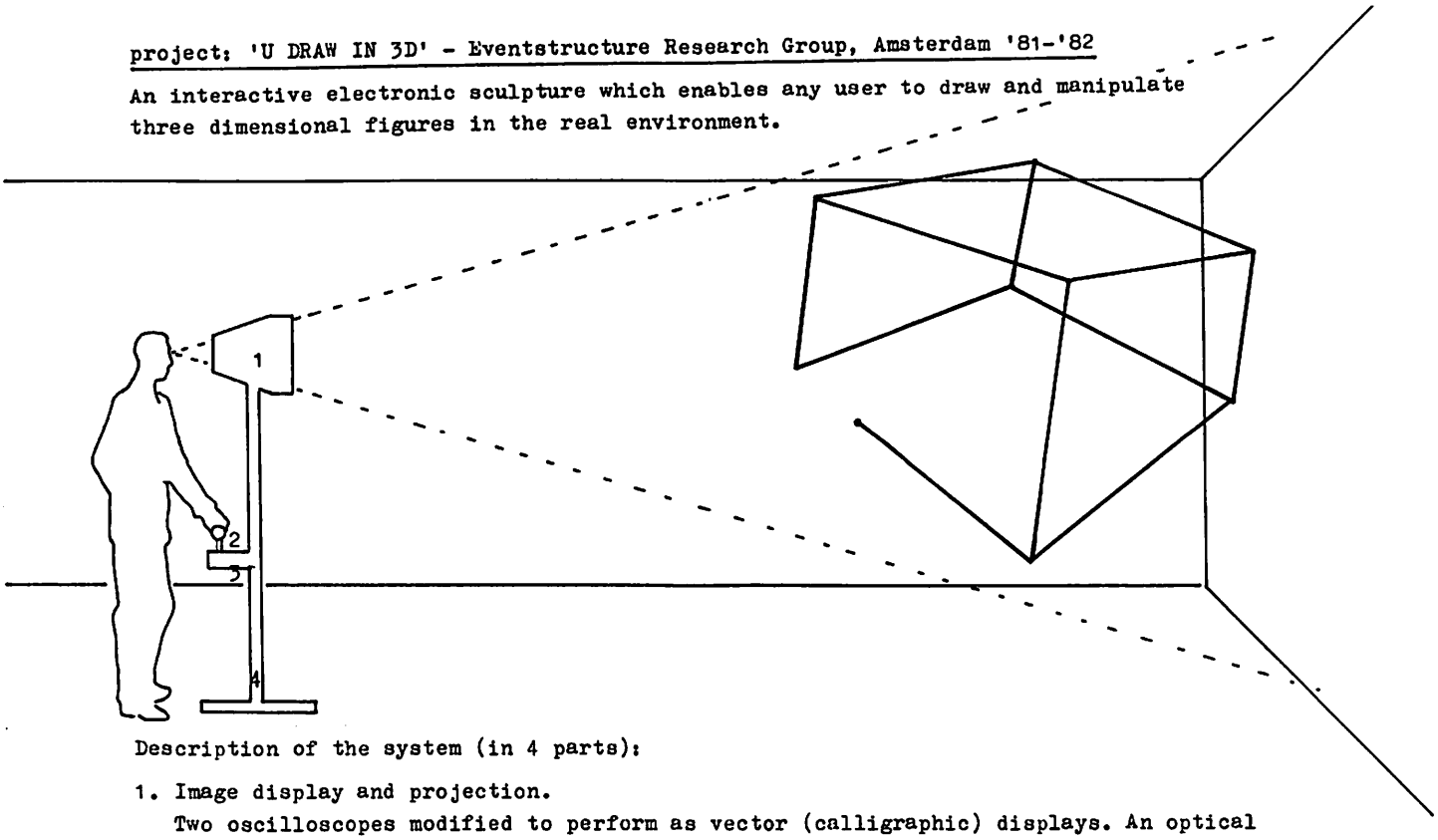
project: 'U DRAW IN 3D' - Eventstructure Research Group, Amsterdam '81-'82

An interactive electronic sculpture which enables any user to draw and manipulate three dimensional figures in the real environment.



Description of the system (in 4 parts):

1. Image display and projection.
   Two oscilloscopes modified to perform as vector (calligraphic) displays. An optical system projects the images from these two displays so that one image is seen by the viewer's left eye and the other by the viewer's right eye, thus creating a composite three dimensional image.
   This composite three dimensional image is reflected off a partially mirrored window through which the viewer looks; thus the viewer sees the 3D image in the actual environment that he/she is facing. (This can be any environment, indoors or outdoors, and in full daylight).

2. Image creation and animation.
   A control panel with a multi-axis joystick and other devices, which enable the viewer to first draw any three dimensional figure, and then to animate this figure. There are two operating modes:
   i. Drawing mode -
      the viewer uses the three-axis joystick to draw lines in space. Starting from a point at the centre, the left/right joystick movement stretches a line to the left or right, the up/down joystick movement draws the line up and down, and the forwards/backwards joystick movement draws the line towards or away from the viewer. A push-button fixes the position of any drawn line; thus the viewer composes his/her 3D image by drawing and fixing lines from point to point in space.
   ii. Animation mode -
      When the viewer has completed making a 3D image, the same joystick/button controls can be used to animate that image. Some of the kinds of animated manipulation we are planning to incorporate are:
      a) rotation of the image, clockwise and anti-clockwise, and in the horizontal and vertical planes,
      b) zooming of the image to and from the viewer,
      c) mathematical transformations (distortions) of the original image.

3. A dedicated microprocessor
   with specifically developed hardware and software to take the analog outputs from the interactive control panel and generate the respective left eye and right eye vector displays.

4. The console furniture
   that houses all the components mentioned above; powered by mains 220V, and transportable and able to be set up in most environments.