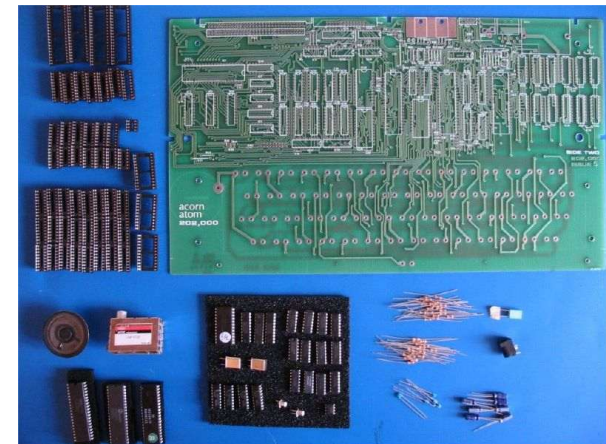


EACVA

Embodied Agents in  
Contemporary Visual Art

## Painting with Plots

- This presentation describes a personal journey of exploration and learning, that continues to this day.
- It started when I was a 2<sup>nd</sup> year Art Student at Gray's School of Art in Aberdeen when I encountered my first PC and a flight simulation program.
- This led me in 1980 to acquire my own PC; an Acorn Atom (which I bought in a kit form and had to solder together) (took **two** goes!) and signed up for evening classes in BASIC programming at Robert Gordon's University.



## Homebrew Tech

- Despite my enthusiasm, I faced many obstacles trying to make pictures on paper. This led me to seek help from the Scott Sutherland School of Architecture next to Gray's, with its CAD software (from Strathclyde University) and various desktop flatbed pen plotters.
- With their kindness and patience, I took my first creative baby steps to use computer technology as an aid for my drawing and painting

Before



After



## Bombing The Trenches

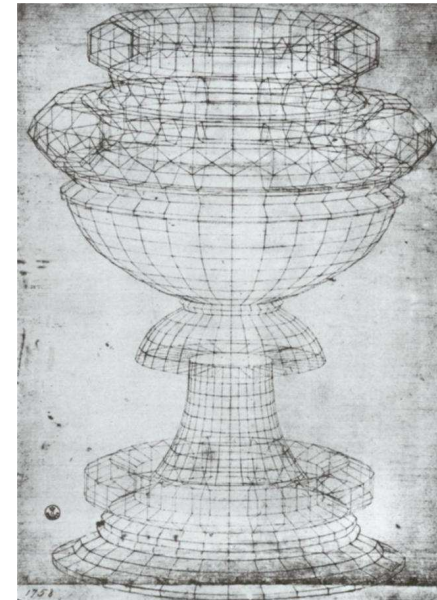
- My journey started in 1979 with an epiphany, a moment of profound personal insight.
- Whilst playing my first ever graphical PC computer game (an Apple II WW1 flying game dropping bombs into trenches) - I realised that this very visual interactive 3D technology could help me with my drawings & paintings.



## Sacred Geometry (1)

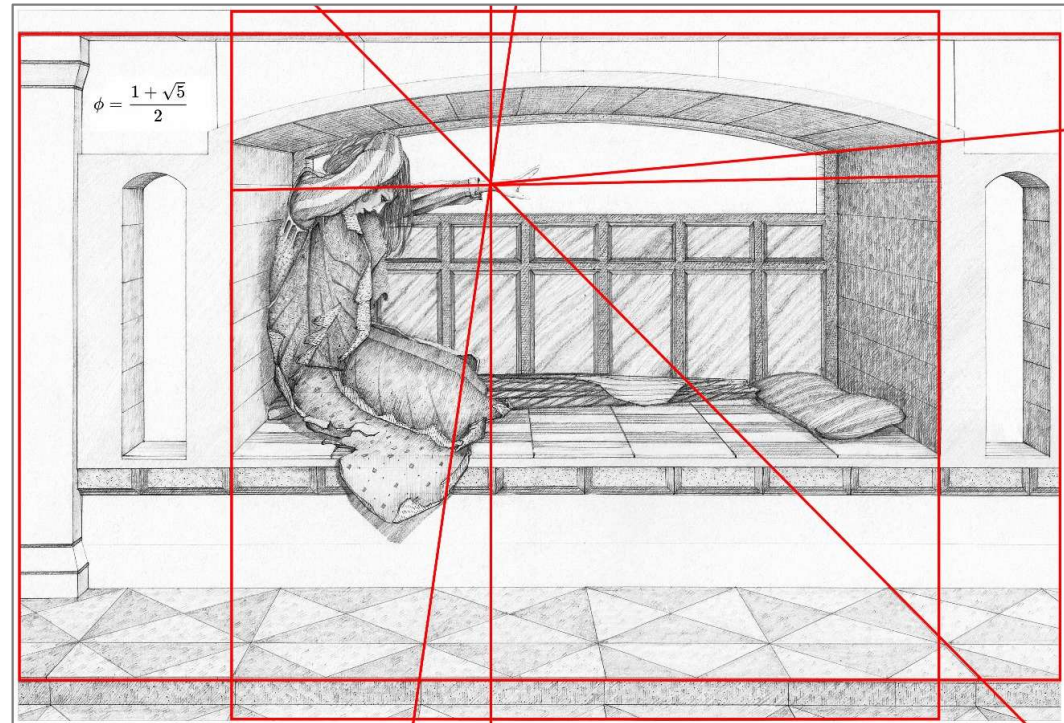
- At that time, I was deeply interested in using Sacred Geometry in my drawing and painting.
  - This can be defined as:  
  
“Fundamental patterns with religious symbolic meanings, which can be combined with perspective to represent and order composition within a visually three-dimensional space on a flat surface”.
- From my travels in Italy, I had seen that the art and architecture of the Renaissance was built upon foundations of laborious technical exactitude.

Paolo Uccello: study of a chalice, c.1430



## Sacred Geometry (2)

- I was highly motivated to find a “**better way**” to create my often-intricate drawings and paintings, as my usage of Sacred Geometry had become increasingly ambitious.
- There comes a point where a plethora of “meaningful” geometry & construction lines can become a burden.



## Journey of Creative and Technical Discovery

- My “**better way**” - using computer aided graphics – led to a creative & technical three-part journey, spread over five years from 1979 to 1984.

**Part 1: 1979 to 1981** - Using a University CAD System with various integrated pen plotters (e.g., vertical, flatbed).

**Part 2: From 1981 to 1983** - Using a Personal BBC Micro Model B, with BBC BASIC and my own desktop office flatbed A3 Pen Plotter.

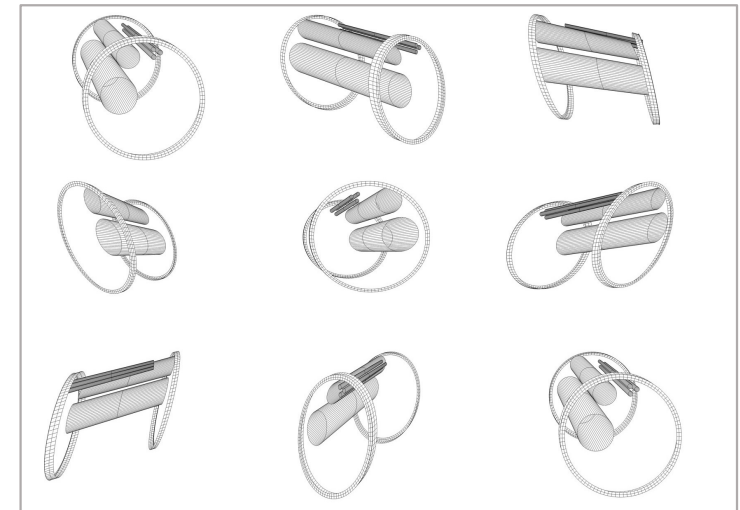
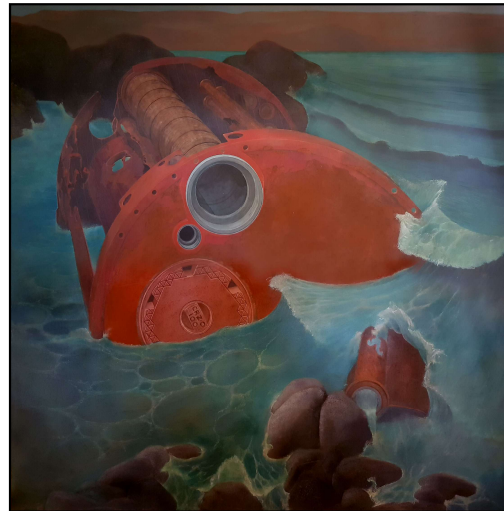
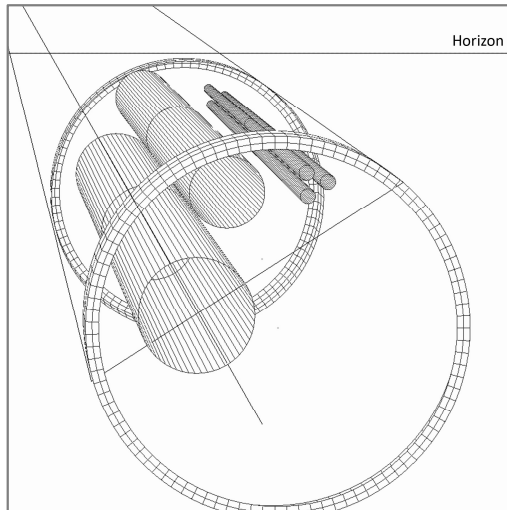
**Part 3: From 1982 to 1984** - Using a University mainframe PRIME Computer with FORTRAN based PICASO and ICARUS graphics libraries.

## The Journey, Part 1:

- 1979 to 1981 - Using a University CAD System with various integrated pen plotters (e.g., vertical, flatbed).
- Using the Scott Sutherland School of Architecture BIBLE CAD system with various pen plotters, to plot one-point and three-point perspective construction drawings.
- All the 3D models were “hand crafted”, assembled point by point, and then line by line, into special text files. Typically, this would take many, many days.
- To transfer these, I plotted onto overhead acetate projector transparencies, projected this on to paper or canvas, and then copied by hand.

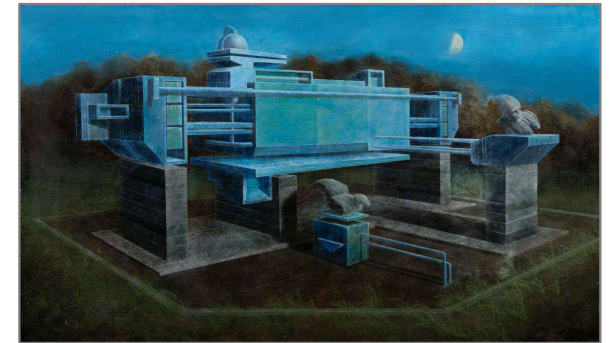
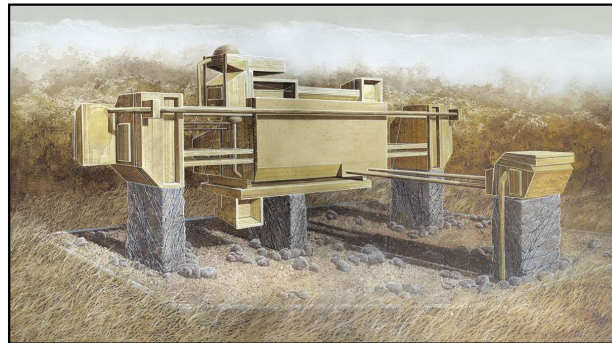
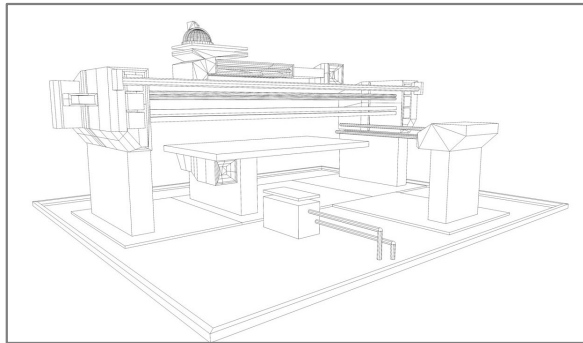
## Ben Skreel, 1981

- In this (60"x60") oil painting I wanted to achieve a synthesis between Japanese sea prints (e.g., Hokusai, The Great Wave) and complex linear perspective Renaissance paintings (e.g., Carlo Crivelli, The Annunciation).



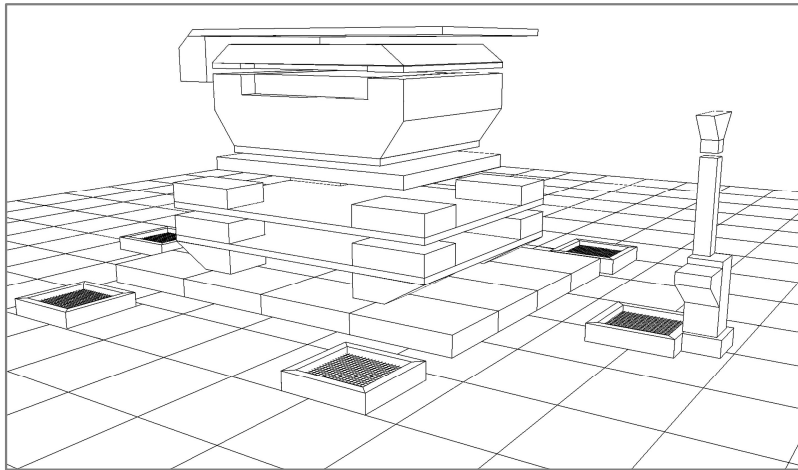
## Station, 1981

- This (72"x42") oil painting & A3 gouache, is from a series of drawings and water colour studies based on local electricity substations.
- Now, apart from the obvious structural interest, I can't recall why I was so interested in them.



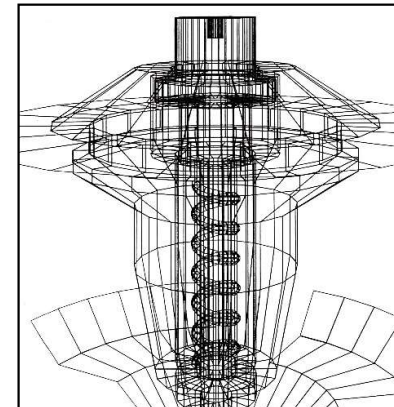
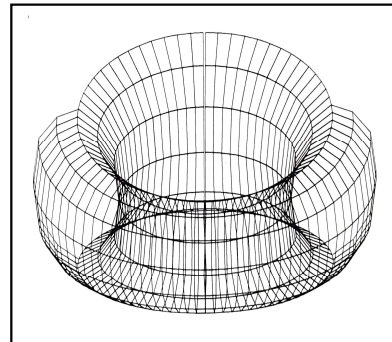
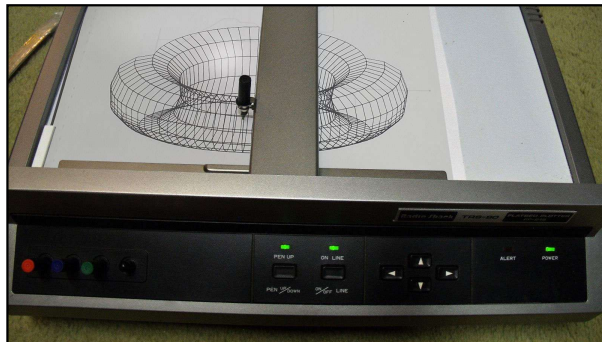
## Tomb, 1981

- This (72"x42") oil painting is an homage to the Tomb of Napoleon I, in the Dôme des Invalides. The small "sculptures in and on the Tomb, are inspired by the work of Jean Amado who was a French sculptor known for creating monumental, poetic sculptures from concrete mixed with ochre, to create organic rock-like forms.



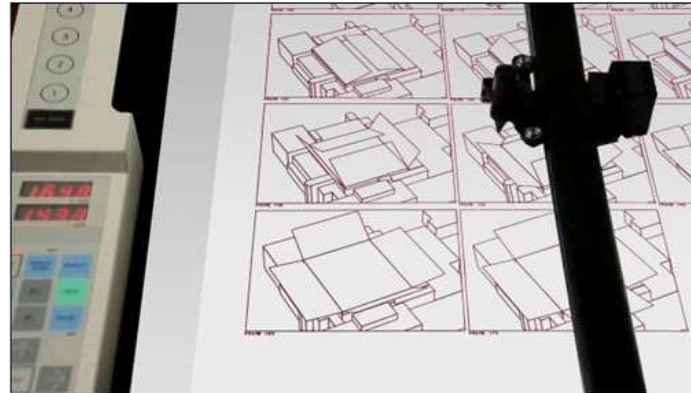
## The Journey, Part 2:

- 1982 to 1983 - Using a desktop office A3 Pen Plotter and BASIC MICRO B graphics.
- This required learning how to write a BASIC program that could generate simple 2D & 3D wireframe computer graphics and then – having read the Plotter’s manual and learned how to control it - plot these onto paper or a transparency.



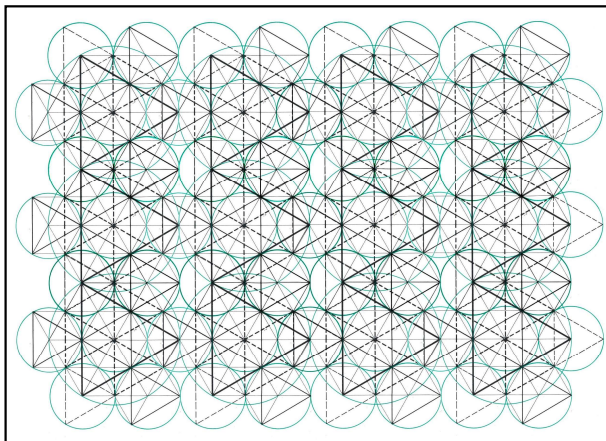
### The Journey, Part 3:

- 1982 to 1984 -Using an industrial A1 size Pen Plotter with FORTRAN and PICASO graphics, whilst working for Professor John Vince in his consultancy based at the Bounds Green site of Middlesex University.
- Finally, unlimited access to multiple very fast, industrial quality, vertical and flatbed pen plotters, and to a large A1 digitising table!
- But also, whilst at the RCA.
- But it was a proper **paid** job!



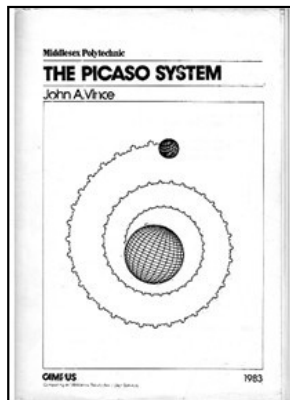
## Working for Keith Critchlow on Islamic X Pattern Constructors

- Various 2D A3 multi colour plots (using a peg bar for registration).
- I was asked by Keith to do a project on the geometry of an egg. This eventually led to him asking for a rework with repetition of an Islamic X Pattern Constructor.



## Working as an Animator

- Whilst working for Professor John Vince my duties included CEL based animation.
- Typically, an animation test would be output on A2 paper, and when I was satisfied that the frame-to-frame difference would provide the quality or type of animation required, it was plotted frame by frame onto A3 or A4 animation CEL's!

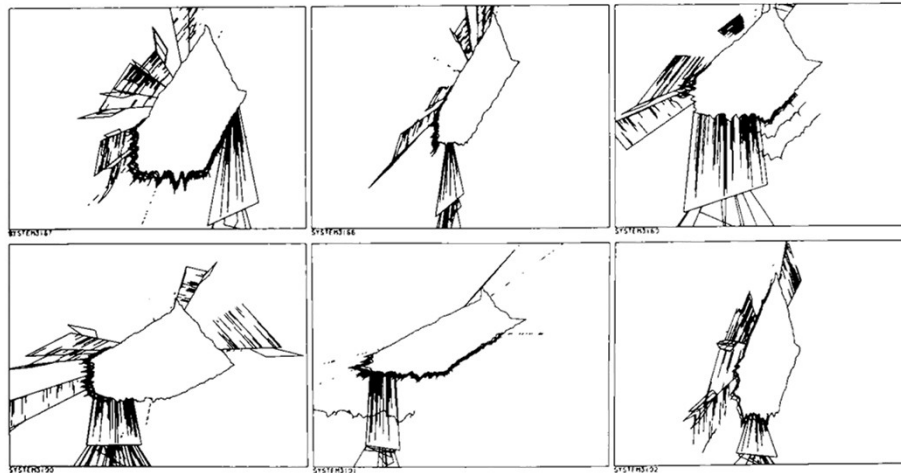
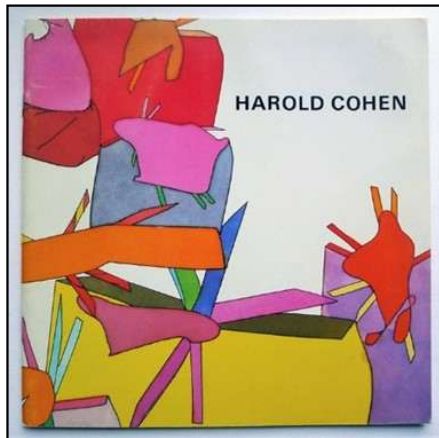


## Working for Harold Cohen in his 1983 Tate Exhibition (1)

- Harold was introduced to me by my RCA Prof. Peter de Francia.
- I was recruited to be an assistant for the 1983 Tate Exhibition. The pay was generous and covered my RCA fees. I spent the summer from 8th June to the 24th of July working in the Tate with AARON 2, tending the plotters. No heavy lifting required.
- High points? Harold's ICA Lectures & I sold a "drawing" to Christopher Lee!

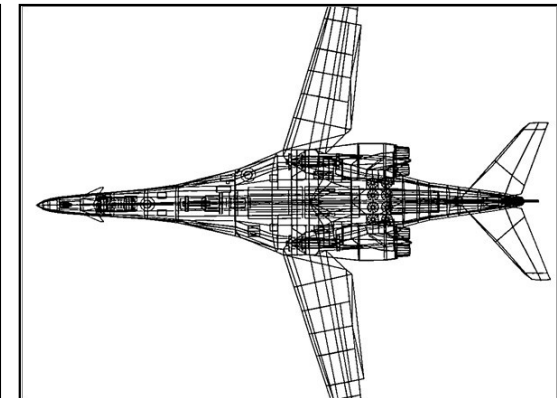
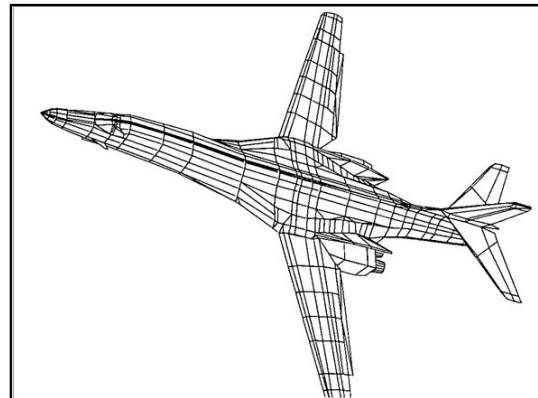
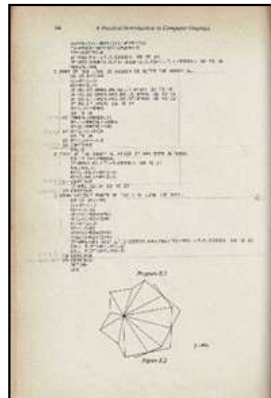
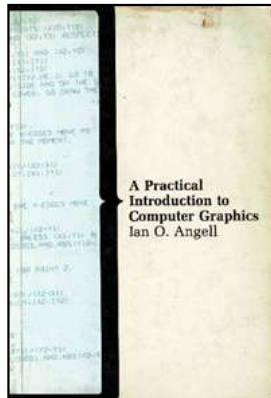
## Working for Harold Cohen in his 1983 Tate Exhibition (2)

- In conversation with Harold, I was given the challenge to create a simple example of animated “Harold Cohen like” line-based objects.
- For this I used all the computational power of the Middlesex University PRIME graphics systems.

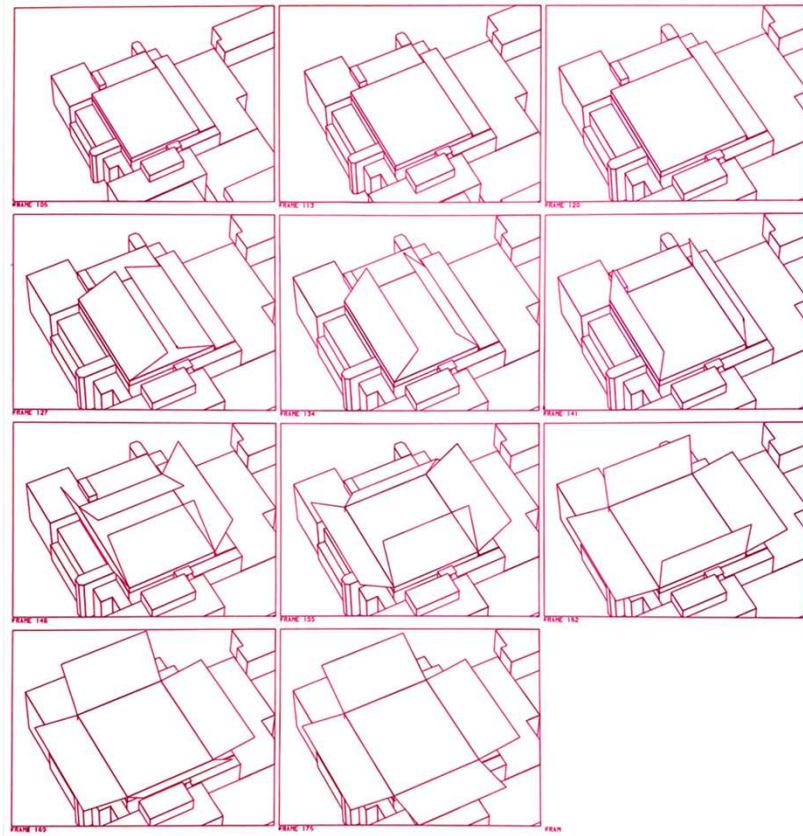


## Hidden Line Removal (HLR)

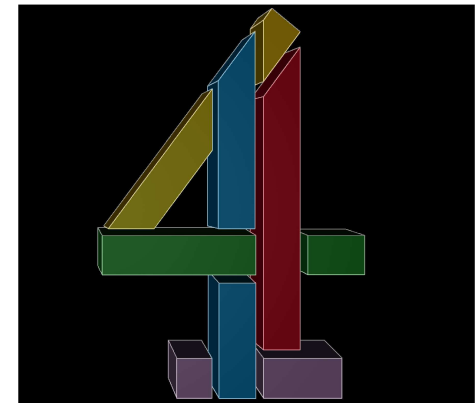
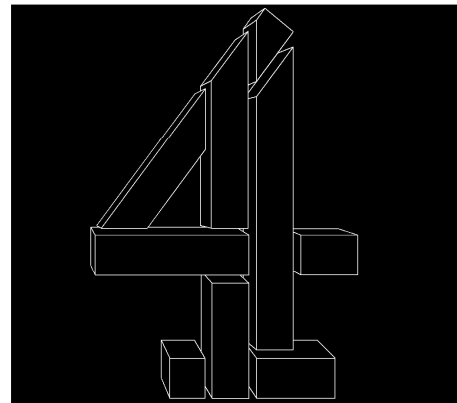
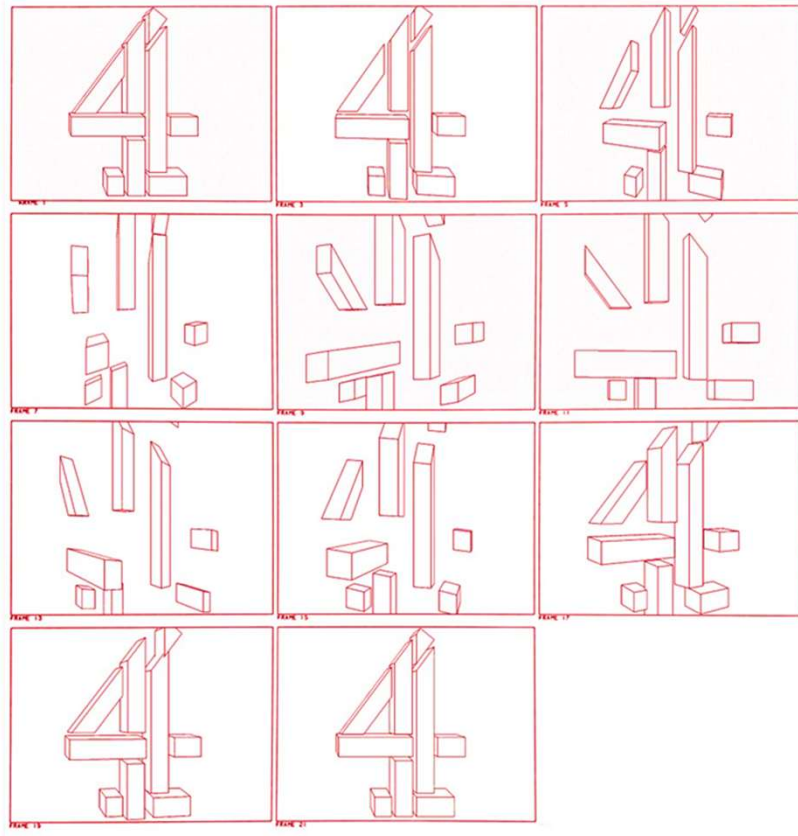
- To improve the range of graphics that the consultancy could offer I was tasked to write a Hidden Line Removal module.
- Fortunately, many of these new (to me) Maths and FORTRAN programming techniques that I required had begun to appear in textbooks. So limited solving from first principles.



## Oxford Road Show, Oxford Studios 2, BBC2, 1983-84



# Channel 4 Logo (TEST 5), Martin Lambie-Nairn, 1982-1983



Thank You

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for more information...