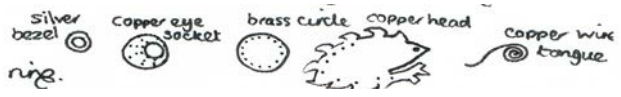
Concept

Before I had developed the design for this ring I had bought three different sized and shaped cabochon stones. The round labradorite stone I chose for the ring inspired the final design. The opalescent qualities of the stone appeared to me like an eye. This led me to look at images of reptiles at the library and the chameleon idea developed from there. The texture of a chameleon's skin and the form of its eye lent itself to be re-created in the workshop from metal. As the nature of a chameleon is to change colour to adapt to its surroundings, I thought it would be fun to incorporate all the types of metal available to me in the workshop. I made sketches to plan the order in which the layers of the ring would be constructed and soldered. This plan made efficient use of time.



Structural Specification

The ring was made and assembled to the plans made in my sketchbook in consultation with tutors and with reference to the resource materials provided by tutors.

- 0.8mm silver plate for shank was chosen as a suitable weight for a chunky reptilian design
- 0.8mm copper plate for chameleon's head
- 0.5mm copper plate for chameleon's eye socket
- 0.5mm brass plate for chameleon's head detail
- Copper wire
- 0.5mm silver plate for bezel
- 7mm x 7mm round labradorite cabochon stone
- Hard solder

1

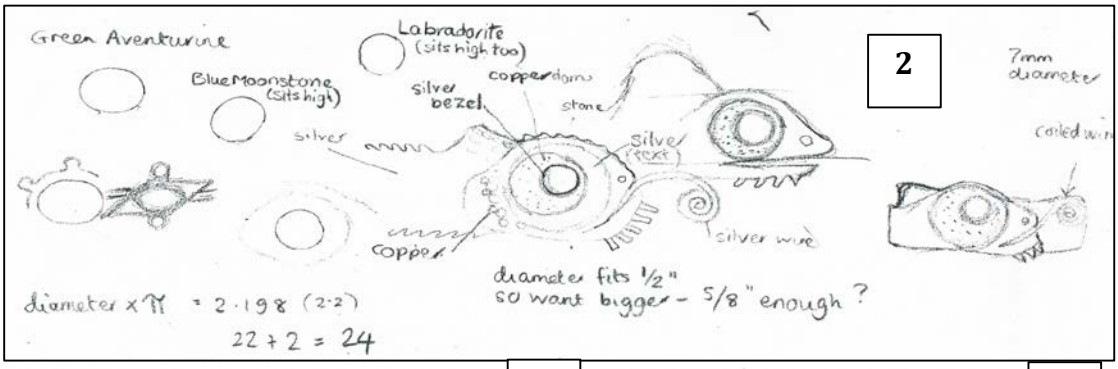
Aesthetic Specifications

- **To create a ring with a number of different textures, material and finishes**

Textures – sanding with 600, 800 and 1200 sanding sticks, steel wool, V-shaped punch and various sized pointed punches

Materials – silver, copper, brass, copper wire, labradorite stone

Finishes – matt finish on the shank, oxidized finish on other parts to emphasize their textures, burnisher to bring out highlights



Construction Plan

3

1) I formed a wire loop around my middle finger, which when cut open measures 60.5mm
2) Drew a pencil sketch for the shank of the ring and stuck it to a piece of double-sided tape.
3) With the pierce saw cut a length of 0.8mm silver to measure 63mm in length and 7mm in height, in accordance to the dimensions of the drawn design.
4) Attach the paper pattern to the silver piece and cut out the design.
5) Annealed the silver in order to soften it prior to texturing, quenched it and put it in the pickle for 5 minutes.
6) Sanded the silver with 600 sand-paper to create a matt finish prior to texturing with a punch.
7) Attached with double-sided tape the paper pattern for the chameleon's head to a piece of 0.8mm copper plate and cut out with the pierce saw.
8) Holding the copper head piece to mask the silver shank, I could determine where the silver needed to be textured.
9) Used a small V-shaped punch to create a scale-like pattern on the silver shank (refer test 3).
10) Used a small flat file to create a beveled edge along the top and bottom edges of the shank. Beveling makes the silver catch the light and makes the ring smooth and comfortable to wear (test 3)
11) With the disc cutter cut a ⅝in disc from a piece of 0.5mm brass scrap for the chameleon's head and a ½in disc from 0.5mm copper scrap for the chameleon's eye socket.
12) With the doming punch shaped the copper disc
13) Textured the disc with a small pointed tip punch to make a radial pattern on the back of the disc. This would give the raised bumps on the surface of the eye socket. After making one dome I realized that the centre point of the radial pattern should be off-centre to match with the placing of the stone. Therefore I cut another disc, domed it and punched the radial pattern again.
14) Cut a piece of 0.5mm silver plate to make the bezel, in accordance to the measurements stated earlier (24mm long and 5mm high).
15) Filed the edges of the bezel piece with a flat file and then a 1200 sanding stick ensuring all edges were straight and even.
16) Annealed the bezel silver piece with the gas torch until it was a strong red colour, then quenched it in water.
17) Using the bezel mandrel, nylon hammer and the swage block, I formed the piece into the round so that the edges were tightly touching and no gaps were visible when held up to the light.
18) Using the pierce saw, cut through the joining ends to make the join more accurate before soldering. Edges left should allow no light through when held up to the light.
19) Applied flux to the join and placed 3 pallions of hard solder along it (refer tests 1 and 2). Introduced the heat from the gas torch slowly to let the flux settle down. Heated the whole bezel until the metal was a strong red colour and the solder flowed along the join, making a shiny line. Quenched the bezel in water and placed it in the pickle for 5 minutes.

Check List of Tests carried out during construction process

4

1) Ring shank soldered using hard solder?	☑
2) Solder joins are accurate with sufficient solder to withstand expected use?	☑
3) Shank filed, sanded and shaped correctly?	☑
4) Ring shank checked for size against specifications using appropriate tool and corrected if necessary?	☑
5) Bezel fits stone with sufficient ease, and height of bezel is correct for stone, and tested visually?	☑
6) Bezel fits shank accurately, check symmetry, distance from edges	☑
7) Stone supported correctly in bezel setting (wobble test) ?	☑
8) Metal finish completed to specification before stone is set?	☑
9) Stone set correctly, check visually for gaps at edges of bezel	☑
10) Ring evaluated against original specifications and drawings	☑

Critique

5

Initially I failed to properly carry out test 5 and made the bezel too small, perhaps by not making accurate measurements. This was corrected by enlarging the bezel using the mandrel, hammer and swage block.
In my haste to see the stone in place, it became lodged in the bezel at an angle. I was able to prise it free, but if the test procedures had been followed more closely this would not have happened.

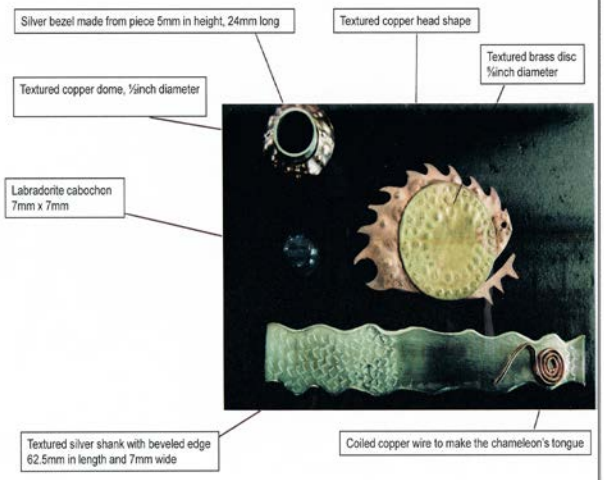
I had not considered the extent to which the filing of the domed piece in order to match the curvature of the shank would distort the appearance of the domed eye socket". It needed to be filed a good deal more than I had imagined, but still works as part of the design. A solution may be to solder a ring of copper around the base of the dome (like when you make a sphere with two domes and a joining strip), keeping more of the domed shape after filing.

Work Efficiency

6

1) Kept all the components for the ring in one place, secured together in a sealed bag, so they were always easy to find.
2) By planning the assembly of the piece in my sketchbook, the best use of time was achieved by having a method to refer to and everything prepared.
3) Economical use of materials: made us of scrap metal in the workshop.
4) Referred to the resource materials provided by tutors (appendix I)

Make Cabochon Ring

Record of Evidence	7	
Ring design Includes reason for design process Alternative designs shown Specifications include at least two special features Structural (1+) Aesthetic (1+) Materials used and costings Working drawings of each component to scale in mm, annotated Size of cab and size of ring shown Equipment and tools to make design features identified Construction plan for sequence of making ring Schedule of testing shows how and when testing carried out, to meet specifications		Photograph of ring being assembled 
Record of progress provided with photographic evidence of making ring Schedule of tests and recorded outcomes Show special feature development Show ring meets specifications Explanations of modifications to plans and/or problems encountered, photographic evidence		observed making. ✓ ✓ ✓ ✓
Safety observed and recorded (schedule) Photographs - student using safety equipment and safe working practices X		observed. checklist provided.
MERIT Independence Student interaction with other students in workshop Level of teacher input required Accuracy: execution of techniques and tests Finished ring meets written specifications and testing schedule Size of ring Finished surface		✓ some interaction - ring of computer design  ✓ ✓
EXELLENCE Economy of time: Observations of student self organisation Economy of effort: Journal entries, Efficiency checklist Classroom observation Economy of resources: Evidence of minimised use of resources Photograph of layout of materials		✓ ✓ – ✓ provided 
Finished ring Observed Discussed Photographs (minimum of 2)		**Conclusion** I enjoyed the organic process of designing this ring, creating the different textures and building its layers. I learned in the making of this ring how important it is to have a plan of assembly. I like the fact that it is not immediately apparent at first glance what the design resembles. This is due to the fact the design was perceived in the flat two-dimensions, and not "in the round", which is something to be considered for future design concepts.