Guidelines for Applicants for NVQ Level 3 (Glass Processing/ Stained Glass)

This qualification is the training structure supported by The Glaziers Company and the British Society of Master Glass Painters as a good basic training in stained glass craft.
It is further endorsed by the Glaziers Company by the awarding of a 'Certificate of Craft Competence' at the annual prize giving to successful applicants, and the BSMGP by awarding the successful applicant with Craft Associate status.

These Guidelines offer a route map for applicants to NVQ level 3 Glass Processing/Stained Glass. However as every candidate is different you should take care to design your coursework to your own particular needs in discussion with your external assessor.

This NVQ should be thought of purely as a craft based qualification. It is therefore as relevant to graduates moving into a workshop environment as it is for trainees within the craft.

What is involved in the qualification?

The qualification requires that the candidate provides evidence of competence to the external assessor from an Approved Assessment Centre in 9 separate units as follows.

- 5 mandatory units (units 1–5)
- 4 optional units. The optional units must be selected as below:
  - 2 units from Group 1 (units 6–11)
  - 2 units from Group 2 (units 12–22)

These units, and the requirements for evidence are set out in the document NVQ 100/3863/2 SVQ G7EW 23. You must receive this document at the time of your application and enrolment.

Help with your application, and support as you work towards the qualification will be provided by an external assessor from the approved assessment centre. This is normally a College of Further Education. He or she will visit you at your place of work, normally at monthly intervals. Your employer should assist you with contacting the assessment centre, and will also need to ensure that someone is nominated as your mentor, and as a point of contact for the approved assessment centre.

It is anticipated that the qualification should take approximately 18 months to complete.
The units do not need to be completed in any specific order.

What does it cost?

(The basic cost as this is written is £108 for registration, course booklet and certificate.
The supervision by the designated approved centre will vary according to the support offered. For reference it cost my workshop about £350 for our latest trainee to complete NVQ level 3, but this was at a time when funding was very limited. The government now seem to appreciate the great importance of vocational training, and more financial assistance seems to be available.
It is important that you are not put off by potential costs without researching this further. There are 2 crucial ways to find out what grants and other financial assistance is available.

1. Involve the approved training centre. They will offer good advice.
(The centres we recommend, and who have been involved in developing the stained glass NVQ are Salisbury College, Dudley College of Art, and Northern Glass Training Ltd.)

2. The best one-stop service for getting clear answers about costs, grants, government assistance etc. is through Proskills at: info @proskills.co.uk.

How does it work in practice?

There are generic groupings common to all NVQ level 3 qualifications, but it will be seen that it is fairly straightforward to relate our craft to the headings, and to provide the necessary evidence.

It is strongly recommended that you keep a journal, which records your day-to-day activity as you progress. You should make notes as you work with sketches and digital photographs to illustrate interesting areas. This need only take a few minutes. You may think that keeping the journal on your PC would be best for you, but do back up the data.

The pages of this journal should be numbered, and at the end of each week without fail you should fill out an index where you identify the areas in the NVQ units to which your weeks activities apply. Your employer should allow you about 30 minutes each week to complete this task.

At your monthly meeting with your external assessor, (which should only take about an hour,) you will complete the documentation and gradually sign off completed units.

The core skills

There is a set of basic craft skills that are required of you to work independently, or to be a useful member of a team in a stained glass workshop. I appreciate that it is far from ideal to merely list these basic skills; after all you will choose the depth to which you explore the various areas. Nevertheless it is a useful starting point, and a list is provided below.

This list is based on the documentation prepared for the (now defunct) BSMGP accreditation scheme, and the guidelines for the Glaziers Company 'Award for Excellence':

- Taking sizes and templates on site.
- Setting out basic cutlines.
- Cartooning and cutlining.
- Glass selection and cutting.
- Painting, staining, enamelling.
- Leading.
- Site works (mortars, support systems, fixing into casements, related disciplines, etc.)
- Conservation techniques (edge bonding, cleaning, etc.)
- History of stained glass (periods, makers, designers, etc.)
- Technical report writing.
- Protective glazing methods, isothermal glazing.
- Contemporary techniques (screen printing, etc.)
- Acid etching/ sandblasting.
- Glass technology, manufacturing process/ degradation processes of ancient glass.
- Project management and pricing projects.

Getting under way

Assuming that you are registered with your Approved Assessment centre you will have the documentation outlining the required units.

Your next step should be to produce a unit plan. You must complete the 5 mandatory units as described below, but the 4 optional units are if anything more important as they will allow you to demonstrate competence in the core skills listed above.

You can use the plan illustrated below, but do think about how you may wish to modify the plan to suit your needs. You may want to include a large amount of glass painting for instance at the expense of site work – you would then need to complete a slightly different set of units.

A typical unit plan

The five mandatory units

Unit 1. Promote and maintain health and safety within the working environment.

Element 1.1 Maintain the health and safety of individuals.

You should make an assessment of several projects you work on and think about maintaining the health & safety of individuals. You might for instance instruct a student on a placement about proper hygiene to avoid ingesting lead dust. You might help to keep the public at a safe distance whilst tower scaffolding is erected. You might instruct a client to wear safety equipment on a site or studio visit.

Make a brief note of 3 or 4 such incidents, with a digital photograph for your journal.

Show these to your external assessor to show that this unit is in progress, and decide with him/her when this element of the unit can be signed off.

Element 1.2 Minimize injury to individuals and damage to property in an emergency.

In practice this is a very difficult element in which to offer any evidence.

Some larger organizations offer emergency drills. All you can do here is discuss what you might do with your mentor, and external assessor. Common sense will have to prevail; often such a theoretical conversation will have to suffice to sign off this element. However one excellent means of proving progress in this area is to attend a Health & Safety course – a number of which are provided by GQA.

Element 1.3 Promote health and safety in the working environment.

There are a number of ways you might show evidence here. You could examine the working practices of the workshop you work in and for instance instigate a more rigorous hand and face washing regime for you and your colleagues. You may talk to the doctor who carries out the statutory periodic blood lead level tests. He/she may highlight the advisability of wearing a mask to guard against dangerous airborne elements whilst glass painting. Introduce this to your own working practices and advise your colleagues.

Make a note of 2 or 3 such initiatives and make a note in the journal to allow signing off of this element. Signing off Unit one should only take up a total of a couple of hours of your time.

Unit 2. Improve the work of the organization.

Element 2.1 Improve the effective use of resources.

Examples; Think about measuring out glass paint recipes accurately using measures to cut down on wastage. Think about improving storage methods to minimize damage to glass in long-term storage.

Lay out glass carefully before cutting, to avoid waste.

Design fixings to hold temporary glazing in place on site which can be used over and over again.

Plan your time. Consult with colleagues and managers to decide when working in concert rather than individually will improve efficiency and make your work easier and more fulfilling – also more profitable for your workshop. Be the one who turns off the electricity when not needed.
Instigate some recycling.
This one is easy: select 2 or 3 such activities and make a note in the journal with photos.

Element 2.2 Obtain and provide information.
Imagine that you don't know what it means when your silicone adhesive is 'thixotropic' – is this important? Would a variety that cures without producing acetic acid be a better option? Or alternatively what grade of solder do you use in the workshop, have you tried other grades, and what are their characteristics?
With the permission of your employer obtain samples of materials and try them, or go onto the web sites of producers to obtain technical sheets. Communicate your findings to your workmates. Contd…
You might find an improvement to everyone's benefit, or conversely rule out a certain course of action and know why. Contd….
Do remember that it can be irritating if you disappear for an hour to do this type of thing whilst your colleagues are working. Don't take too long; spend 10 minutes occasionally on the net rather than half a day. It just isn't necessary.
On a visit to a foreign studio you may take note of a really intelligent way of carrying out a technique, or indeed a new technique. Take note of it and pass it on to colleagues. How do you do this? By talking to your work mates obviously, or by putting the information on to a web information page such as the one on the BSMGP web site.
Another possible avenue is to show a junior or a student how to do something, or how to overcome a technical difficulty. It doesn't have to be too complex. For instance how to label a window using a standard system, and not to put labels onto painted glass, but on to plain borders. You may take a call from a client, or a client may call in when your senior colleagues are not available. You may need to take note of technical information, which you may need to pass on in an efficient and accurate manner.
Select 2 or 3 illustrations and note them in your journal. Discuss with your external assessor prior to signing off this element.

Element 2.3 Develop and maintain good working relationships.
You will need to collaborate with your workmates. If for instance you remove a window on site you will need to work closely with several of your workmates to safely remove, and handle the glass to the ground level for transportation several different relationships in one process which you can illustrate.
You will need to converse with clients from time to time. There may be meetings to discuss progress with specialists from other disciplines.
Keep a note of 2 or 3 of these instances to provide the evidence required.

Unit 3. Assess the quality of glass-related materials.
Element 3.1 Identify the characteristics and features of the glass related materials.
Every time you select a piece of glass for a purpose, and need to know how it is made, and how it will behave when worked, you have material to provide evidence in this area.
Does it have a flash of different colour? Is the flashed glass from France and therefore suitable for aciding? Are you asked to match a 'Norman Slab' – how was it made? Which glass most closely matches it, or is it possible to obtain new slab glass? There is a good reference available – Tony Benyon's excellent article in the BSMGP Journal of Stained Glass vol. XXIX 2005, p.184–198.
It doesn't have to be glass – you may investigate glass painting mediums for example.

This is a very easy element to sign off. Select 2 or 3 entries from your journal to show when you examine the quality of glass or related materials and identify them.

Element 3.2 Detect a variation in quality of glass related materials.
You are asked for a single illustration here. You might work with some glass that loses colour in the kiln when fired, which is common. You may occasionally find a batch of flashed glass which acids off unevenly. Some glass is not annealed properly and cracks randomly when you attempt to cut it.
You might instead identify shortcomings in the materials of a window you are helping to restore or conserve. There may be paint loss or the lead may be embrittled.
Keep a note of one such glass/ related materials type and record with a note and a photo.

Element 3.3 Identify the causes of variations in the quality of glass related materials.
Simply take the case study you identified in element 3.2 and explain the reason for the variation in quality e.g. poor annealing during manufacture, or too high a tin content in solder. You will find out by consulting with your colleagues, or by reading. (Which in turn involves elements of unit 2.)

Unit 4. Diagnose and rectify technical problems.
Element 4.1 Investigate technical problems.
Technical problems can be wide ranging it will be far better if you select a single project as your illustration which encompasses all 3 elements of this unit.
Technical problems could include paint loss in 19th C. stained glass, the failure of a support system for a window within a building, the failure of a glass to accept silver stain, How to achieve a particular matt when glass painting. Part of your plant or machinery, a kiln, sandblaster unit, may be malfunctioning. Glass in your care may be corroded and need protection.

Element 4.2 Diagnose the causes of the technical problem
Do simply as asked – explain in a concise way the cause of the technical problem you have chosen to illustrate. For example if you are dealing with a severely bowed window which is under supported by glazing bars, show your analysis of the problem by employing photographs, and a written description. (100 words will suffice.) Show your consideration of bar placements within the design of the window to show how and why the problem has occurred.

Element 4.3 Rectify technical problems.
Show how you would overcome the technical problem. Note how you get the information you need.
Do you confer with senior colleagues? In the case of the sagging window, new bars will be required; they may need to be slightly heavier in section and more frequent. There will be a discussion of the aesthetic impact of this on the design with architect or art historian.
Ample ammunition for your journal, and to provide evidence for this unit.

Unit 5. Plan the use of resources to meet work requirements.
Element 5.1 Identify the work that needs to be achieved.
This is a simple process, achieved in a straight forward way by having a brief weekly meeting with colleagues to set out aims for the work you need to complete during the week. In this way you will be able to set yourself a target for the week. You must then organize your own time, and see to it that the materials, and assistance from others are in place to meet the targets. It doesn't matter that as a junior member of staff your input into these meetings and the

decisions made is not great. It is the taking part in the process and making a record in your journal that gives the evidence required by your external assessor.

Element 5.2 Utilize resources to achieve work requirements.
This is merely an extension of element 5.1. Continue to record your progress.

Element 5.3 Monitor the progress of the work.
This should be a weekly summary of the successes and failures of your work in terms of planning time and use of resources.

The two optional units from Group 1

It is suggested that you choose Units 8 and 9.
REMEMBER! Don't take an easy route – your unit plan should be in place to allow you to extend yourself and show a high level of competence in all the core skill areas.

Unit 8. Process complex products and materials.
Element 8.1 Prepare complex products and materials for processing.
Think of 'complex products and materials' as whole project based – your work at its most complex, and involving.
With the help of your employer, select a project which is current in your workshop.
Prepare a pre conservation report, or a design proposal for new work.
This should start right from the outset of the project from initial contact with the client and an initial site visits, and should go on to record research, technical testing of plant and materials.
For conservation/restoration students produce a written report, which gives a CVMA annotated plan of the building and the window. Identify the maker, record your research (books/ manuscripts/ internet/ church records etc.)
Identify the technical problems involved with the project. Describe all the possible restoration/ conservation approaches which may be applicable. Record your research as before.
Decide on your approach.
For design/new work students produce a description of your design, along with scale sketch in colour and description of materials and techniques.

Element 8.2 Apply processes to complex products and materials.
Think the whole project through. Based on the things you learned in the preparation, plan all the processes, materials and time management issues to see the project through to completion.
Carry out the restoration/conservation, or the new work. Detail the core skills demonstrated and note these in your journal and photographically. This can include anything relevant – firing tests, aciding tests, milling specialist leads, glass painting. cartooning, resin bonding, conservation diagrams, environmental monitoring, annealing plans, producing of screens for printing etc. etc.
Finally produce a post conservation report or a final design report in your journal pulling together all these strands.

- The process in deciding a conservation/restoration or design approach.
- A report summarizing these decisions, and the research processes involved.
- A detailed technical record of the process of restoring/conserving or making a new window.
- A detailed analysis of the core skills demonstrated.
- A final summary report.

Unit 9. Decorate complex glass products.
Element 9.1 Decorate complex glass products by removal or addition of material.

Here is the opportunity to describe in detail glass, painting, enamelling, screen printing, acid etching, sandblasting, fusing. Your manipulation, and experimentation with *any surface treatment traditional or modern.*
Select two or three projects, or selected areas of projects, and detail the recipes for glass paint, painting mediums, compatibility of glasses, preparation of backing glasses, etc. etc. Your descriptions should be detailed; you should know what is in glass paint or silver stain. Why does it behave as it does? What chemical processes are taking place? Detail this information in your journal.

Element 9.2 Finish the decoration of complex glass products.
Detail the finishing – the firing, kiln manipulation, fusing, polishing, leading, and installation of the glass produced in element 9.1. This could be small pieces leaded into a completed medieval glass panel as part of a restoration/conservation process, or the annealing of large panels and their installation in a screen wall in a modern architectural setting.
Record this final finishing process in your journal.

The two optional units from Group 2.

Units 13, 14 and 15 are the suggested options.
We suggest that you complete these 3 units for 3 separate projects as your competence develops.
Let project 1 be a simpler process like the production of a high quality leaded light or simple stained glass panel to a standard that will be good enough to be installed in a building by your employer.
The second and third projects should be increasingly complex.

Unit 13. Process products and materials by cutting.
Element 13.1 Prepare products and materials for processing.
Describe preparing to cut glass. Glass selection, safe storage, tools and processes.
This should be done for each project.

Element 13.2 Cut products and materials during processing.
Demonstrate simple intermediate and complex glass cutting in your journal.

Unit 14 Process products and materials by shaping.
This is an opportunity to show your competence developing in shaping materials. This can include leading up, glass bending, grinding etc. etc.
For leaded panels show simple, intermediate and complex technique.

Element 14.1 Prepare products and materials for processing.
Show preparation of the workspace, materials and tools. You may mill lead for a specific purpose. You will certainly need to select lead to suit glass types.
For modern techniques describe your processes, kiln preparation etc.

Element 14.2 Shape products and materials during processing.
Demonstrate techniques used in the 3 projects in your journal, make a thorough photographic record.
Your projects should demonstrate increasing craft skills.

Stephen Clare for BSMGP Conservation Committee