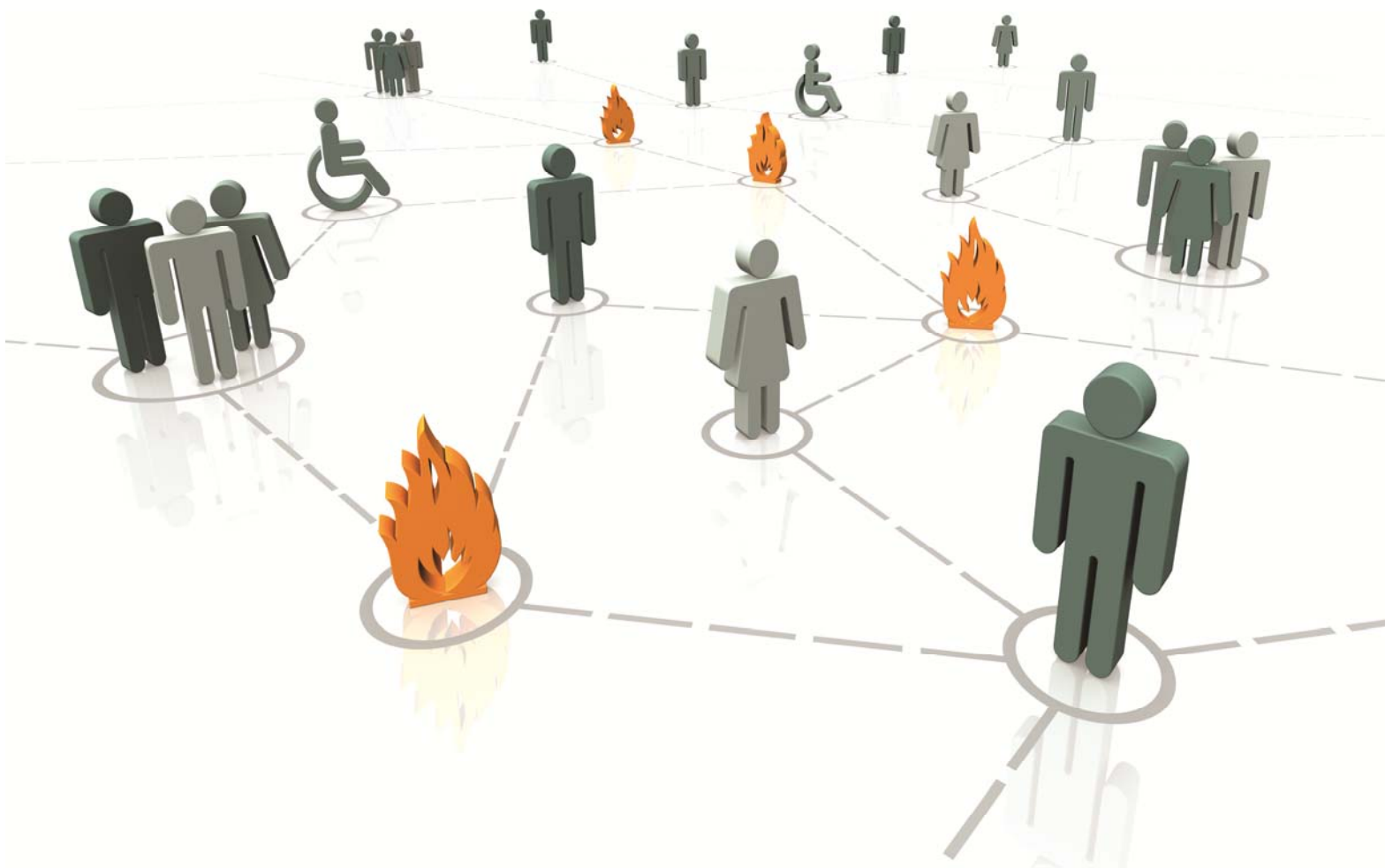


IFE: Level 5 Diploma in Fire Engineering Design

RPL: Recognition of Prior Learning



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1. Introduction

This document is designed to help those who wish to claim the qualification retrospectively following competence achieved by courses, personal development, workplace learning and experience.

1.1 Qualification

Level 5 Diploma in Fire Engineering Design, consists of 10 mandatory units. See Section 2 for details.

1.2 Awarding Body

This qualification is provided via awarding body: The Institution of Fire Engineers (IFE). Xact is an approved assessment centre for the IFE.

1.3 Achieving qualifications

The qualification can be achieved by:

- a) Collection of evidence from courses, *or*
- b) Recognition of prior learning (RPL), *or*
- c) Combination of a) + b)

1.4 RPL evidence requirements

To achieve a qualification by RPL, applicants must provide evidence to show:

- a) how they became competent and have maintained their competency
- b) that they are currently competent to the qualification criteria

1.5 Evidence sources

Some important points to remember about RPL:

- a) Applicants are required to evidence key areas of unit assessment criteria.
- b) Evidence may be obtained from a variety of sources, the most common being:
 - Work place activities
 - Course assessments
 - Technical questions
 - Assignment
 - Professional interview

1.6 Evidence currency

The process requires applicants to demonstrate that they are currently competent. Evidence which is three years old may demonstrate that an applicant was competent three years ago but it may not be valid now. The RPL process offers the following options to ensure evidence is current:

1. Introduction

- a) Provide additional evidence to show competence has been maintained, *or*
- b) Provide evidence from an alternative source which is less than 18 months old

1.7 Personal evidence collection plan

To achieve a qualification by RPL, applicants must provide evidence which demonstrates that they have the core knowledge, understanding and skills to fulfil the relevant unit assessment criteria.

Following an application and subsequent telephone interview, Xact provides a collection plan for each applicant which identifies:

- a) Applicant's evidence sources (workplace activity) for those core areas
- b) Framework for the collection of evidence (evidence collection guide) when conducting workplace activities

1.8 RPL Terminology

RPL, which is a term used by the Qualifications and Credit Framework (QCF) and Awarding Bodies, may also be referred to by the following terms which broadly describe the same process:

- Accreditation of Prior Learning (APL)
- Accreditation of Prior Experiential Learning (APEL)
- Accreditation of Prior Achievement (APA)
- Accreditation of Prior Learning and Achievement (APLA)

1.9 Assessment criteria

See Section 2 for more details about the qualification assessment criteria.

1.10 RPL process

See Section 3 for more details about the RPL process.

1.11 Unit accreditation

Applicants may apply for individual unit accreditation e.g. they do not have to complete all units.

1.12 Application

Please submit a completed application form, obtained by emailing qualifications@xact.org.uk

1.13 Terms and conditions

Terms and Conditions apply, please see our website link at [www.xact.org.uk/Terms and Conditions](http://www.xact.org.uk/Terms_and_Conditions) for a copy of our Terms and Conditions or contact us on courses@xact.org.uk to request a copy. All orders and bookings made will be subject to our Terms and Conditions.

2. Unit assessment criteria

The table below identifies the ten mandatory qualification units, their learning outcomes and assessment criteria for the qualification: Level 5 Diploma in Fire Engineering Design.

Unit	Unit title	No	Learning outcomes	Assessment criteria
1.	Principles of Fire Development and Spread	1.1	Understand how fire develops and spreads in buildings	Explain the principles of fire development Explain how fires are initiated and develop within enclosure of origin Explain how smoke and toxic gases spread within and beyond enclosure of origin
2.	Principles of Fire Engineering	2.1	Understand the principles of fire engineering design	Explain the principles of fire engineering design frameworks Evaluate design frameworks Explain the principles of fire development, fire spread and the impact of fire on buildings Analyse management levels for fire engineering designs Explain detection and activation systems Explain the requirements for fire service intervention Evaluate evacuation strategies Explain the principles of a Qualitative Design Review (QDR) Understand and know how to apply relevant national standards, guidance and regulations
		2.2	Understand best practice for fire engineering consultations	Explain best practice for fire engineering consultations Explain best practice for fire engineering pre-consultations
		2.3	Evaluate the effectiveness of fire engineering designs	Explain the principles of quantitative design analysis Evaluate the effectiveness of a quantitative analysis review guidance
		2.4	Conduct an impact assessment of a fire engineering design	Explain the principles of an impact assessment Conduct an impact assessment of fire engineering designs

2. Unit Assessment Criteria

Unit	Unit title	No	Learning outcomes	Assessment criteria
3.	Review the Effectiveness of Automatic Fire Suppression Systems	3.1	Understand the principles of automatic fire suppression systems	Describe automatic fire suppression systems Confirm the suitability of automatic fire suppression systems for risk Compare the advantages and disadvantages of automatic fire suppression systems
		3.2	Assess the effectiveness of sprinkler systems	Explain technical guidance relating to sprinkler systems Evaluate the suitability of sprinkler system components Explain water supply arrangements for sprinkler systems Describe the design criteria of sprinkler systems Evaluate the effectiveness of sprinkler system designs Determine the effectiveness of a maintenance programme for sprinkler systems
		3.3	Assess the effectiveness of water mist systems	Evaluate technical guidance relating to water mist systems in premises Evaluate the effectiveness of water mist system designs Determine the effectiveness of a maintenance programme for water mist systems
		3.4	Understand the principles of oxygen reduction systems	Explain technical guidance relating to oxygen reduction systems Explain the principles of oxygen reduction systems
		3.5	Understand the principles of gaseous, foam systems and other fire suppression systems	Explain technical guidance relating to gaseous, foam systems and other fire suppression systems Explain the principles of gaseous, foam systems and other fire suppression systems Recognise future developments in fire suppression systems

2. Unit Assessment Criteria

Unit	Unit title	No	Learning outcomes	Assessment criteria
4.	Fire Engineering Design and its Impact on Human Behaviour	4.1	Understand the effect of fire on human bodies and behaviour	<p>Explain the principles of tenability limits</p> <p>Identify the tenability criteria for exposure to fire, heat and toxic gases</p> <p>Explain the impact of heat and smoke on the human body</p> <p>Explain the impact of heat and smoke on human behaviour</p> <p>Explain the effects of fire on group dynamics</p>
		4.2	Understand how fire engineering design impacts on human behaviour	<p>Identify how fire engineering design impacts on human behavior</p> <p>Define the principles of ASET and RSET</p> <p>Review simple ASET/RSET calculations</p>
		4.3	Review the impact of fire engineering design on human behaviour	<p>Assess the impact of fire engineering design on human behaviour</p> <p>Identify areas of non-compliance with best practice, design advantages/disadvantages of solutions standards and guidance</p> <p>Propose options to resolve areas of non-compliance in human behaviour</p>
5.	Fire Engineering Design and its Impact on the Fire Resistance of Materials and Structures	5.1	Understand the effects of fire on materials and structures	<p>Explain the impact of fire on materials</p> <p>Evaluate the suitability of materials used for building structures</p> <p>Explain the methods for testing the levels of fire resistance of materials</p>
		5.2	Understand how fire engineering design impacts on the fire resistance of materials and structures	<p>Explain guidance relating to achieving suitable levels of fire resistance</p> <p>Evaluate methods of reducing impact of fire on materials</p> <p>Propose alternative methods for reducing levels of fire resistance</p>
		5.3	Review the impact of a fire engineering design on the fire resistance of materials and structures	<p>Assess the impact of a fire engineering design on levels of fire resistance</p> <p>Assess levels of fire resistance on a fire engineering design</p> <p>Identify areas of non-compliance with best practice, design standards and guidance</p> <p>Propose options to resolve areas of non-compliance on the levels of fire resistance</p>

2. Unit Assessment Criteria

Unit	Unit title	No	Learning outcomes	Assessment criteria
6.	Smoke Control and Heat Exhaust Ventilation Systems	6.1	Understand the principles of smoke control and heat exhaust ventilation systems	<p>Explain the principles of smoke control and heat exhaust ventilation systems</p> <p>Explain technical guidance relating to smoke control and heat exhaust ventilation systems</p> <p>Analyse the objectives of smoke control and heat exhaust ventilation systems</p>
		6.2	Determine a suitable design fire	<p>Define the concept of a design fire</p> <p>Analyse design fire parameters</p> <p>Identify a suitable design fire</p>
		6.3	Determine the mass flow of smoke and temperature in smoke layers	<p>Identify the mass flow of smoke within a smoke layer</p> <p>Identify the temperature within a smoke layer</p> <p>Check for the stratification of a smoke plume</p>
		6.4	Assess smoke control and heat exhaust ventilation system components	<p>Explain the requirements for components of smoke control and heat exhaust ventilation systems</p> <p>Evaluate the effectiveness of system components</p>
		6.5	Evaluate the effectiveness of existing smoke control and heat exhaust ventilation systems	<p>Explain the design principles of smoke control and heat exhaust ventilation systems</p> <p>Evaluate the effectiveness of existing smoke control and heat exhaust ventilation systems</p>
		6.6	Design a simple natural and mechanical smoke control and heat exhaust ventilation systems	<p>Identify design calculations for smoke control and heat exhaust ventilation systems</p> <p>Design natural and mechanical smoke control and heat exhaust ventilation systems</p>
		6.7	Evaluate the effectiveness of the maintenance and commissioning programme for smoke control and heat exhaust ventilation systems	<p>Identify the maintenance and commissioning requirements of a smoke control and heat exhaust ventilation system</p> <p>Evaluate the effectiveness of a maintenance and commissioning programme for a smoke control and heat exhaust ventilation system</p>

2. Unit Assessment Criteria

Unit	Unit title	No	Learning outcomes	Assessment criteria
7.	Pressure Differential Systems	7.1	Understand the principles of pressure differential systems	<ul style="list-style-type: none"> Identify codes of practice and technical guidance relating to pressure differential systems Explain the principles of pressure differential systems Identify the objectives of pressure differential systems Explain how smoke moves in buildings Identify methods of controlling smoke Explain the requirements for components of pressure differential systems
		7.2	Evaluate existing pressure differential systems	<ul style="list-style-type: none"> Analyse pressure differential system components Evaluate existing pressure differential systems
		7.3	Assess a simple pressure differential system design	<ul style="list-style-type: none"> Explain the design criteria for pressure differential systems Identify design calculations for pressure differential systems Evaluate a simple pressure differential system design
		7.4	Evaluate the effectiveness of the maintenance and commissioning programme for pressure differential systems	<ul style="list-style-type: none"> Identify maintenance and commissioning requirements for pressure differential systems Evaluate the effectiveness of the maintenance and commissioning programme
8.	Fire Engineering Design and its Impact on the External Spread of Fire	8.1	Understand how fire engineering design impacts on the external spread of fire	<ul style="list-style-type: none"> Explain the principles of space separation Explain the effect of external spread of fire on materials
		8.2	Apply fire engineering design to the external spread of fire requirements	<ul style="list-style-type: none"> Assess the external spread of fire for a fire engineering design Identify areas of non-compliance with best practice, design standards and guidance Propose options to resolve areas of non-compliance in the external spread of fire requirements

2. Unit Assessment Criteria

Unit	Unit title	No	Learning outcomes	Assessment criteria
9.	Fire Engineering Design and its Impact on Access and Facilities for Fire-Fighting	9.1	Understand how fire engineering design impacts on the access and facilities for firefighting	Explain access and facility requirements for firefighting Explain the impact of fire engineering design on access and facility requirements for firefighting
		9.2	Apply fire engineering design to the access and facility requirements for firefighting	Evaluate the effectiveness of the access and facilities requirements for firefighting in a fire engineering design Identify areas of non-compliance with best practice, design standards and guidance. Propose options to resolve areas of non-compliance in the access and facilities requirements for firefighting on fire engineering designs.
10.	Principles of Fire and Evacuation Modelling	10.1	Understand principles of fire and evacuation modelling	Explain the principles of fire and evacuation modelling
		10.2	Identify suitable fire and evacuation models	Explain best practice relating to fire and evacuation modelling Evaluate the suitability of fire and evacuation models

Notes

Note 1: Please see: www.xact.org.uk/qualifications/level-5-diploma-fire-engineering-design/ for more details about the qualification,

Note 2: Applicants may apply for individual unit accreditation i.e. they do not have to complete all units

3. RPL Process

3.1 Introduction

This section details the process for existing fire safety professionals to achieve a qualification.

3.2 Demonstration of competence

Applicants must demonstrate that they are **currently competent** to the **qualification assessment criteria** e.g. provide evidence from the last 12 months.

Notes

Note 1: The fact that an applicant has been doing a role for several years does not demonstrate competence

Note 2: Applicants must pass all assessment criteria of each qualification unit

Note 3: Applicants must show that the evidence is their own

3.3 Process

The process for each qualification consists of five main stages:

- a) Application
- b) Identification of activities to collect evidence
- c) Evidence submission
- d) Evidence assessment
- e) Qualification issue and return of evidence

See section 3.6 RPL Flowchart for more information.

3.4 Evidence sources

Evidence may be obtained by the following methods:

- a) Evidence from work place activities e.g. fire engineering submissions, consultations, guidance and recommendations.
- b) Evidence from recent course assessments
- c) Technical questions
- d) Assignment
- e) Distance learning module
- f) Professional discussion

3. RPL Process

Note

Applicants are not required to provide evidence from all sources listed above. On application for the RPL process, applicants will be assessed and consulted to identify suitable activities from which to collect evidence.

3.5 Qualification requirements

A Level 5 qualification requires RPL applicants to demonstrate the following knowledge and skills:

3.5.1 Knowledge requirement

- a) Practical, theoretical or technological knowledge and understanding of a subject or field of work to find ways forward in broadly defined, complex contexts.
- b) Ability to analyse, interpret and evaluate relevant information, concepts and ideas.
- c) Awareness of the nature and scope of the area of study or work.
- d) Understanding of different perspectives, approaches or schools of thought and the reasoning behind them.

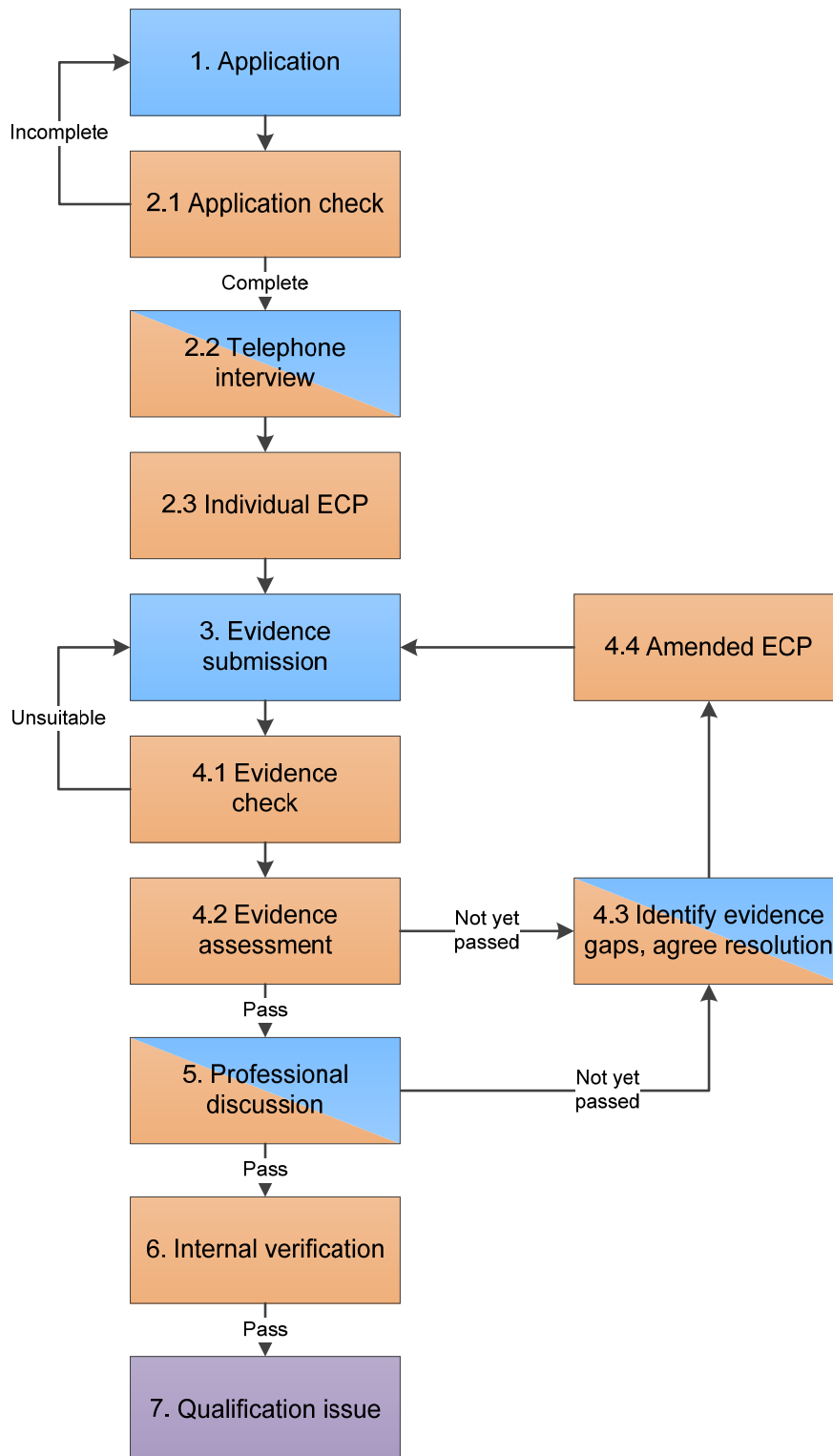
3.5.2 Skills requirement

- a) Determine, adapt and use appropriate methods, cognitive and practical skills to address broadly defined, complex problems.
- b) Use relevant research or development to inform actions.
- c) Evaluate actions, methods and results.

3. RPL Process

3.6 RPL Flow chart

Flowchart below illustrates RPL process from application to qualification.



See following page for more explanation about each stage.

3. RPL Process

RPL Flowchart – further information

1. Application

To enable Xact to assess an applicant's:

- a) Recent workplace experience relevant to qualification assessment criteria
- b) Current CV and job role
- c) How initial competence was achieved
- d) How competency has been maintained

2.2 Telephone interview

A telephone discussion with applicant based on information provided in the application form which is used as basis to identify suitable workplace activities for evidence.

2.3 Individual ECP (Evidence collection plan)

Based on telephone conversation, Xact will provide a scheme for collecting evidence, consisting of:

- a) Individual **Evidence collection plan**
- b) **Evidence collection guide** for each activity agreed in the evidence collection plan
- c) **Questions** will be included when it appears an activity does not provide sufficient evidence

Note: If the evidence submitted on assessment (Stage 4) does not fulfil the qualification requirements, additional evidence will be required.

3. Evidence submission

Submission of evidence agreed in the evidence collection plan and guides.

4. Evidence assessment

Applicant's evidence is assessed to unit assessment criteria. See Section 2 for more information.

If insufficient evidence is submitted to pass the qualification assessment criteria, Xact will:

- a) request additional workplace evidence, *or*
- b) request evidence from alternative sources e.g. technical questions, assignment etc, *or*
- c) advise applicant to attend a training course

Notes

Note 1: When appropriate, the RPL process should be supervised by applicant's line manager/co-ordinator to co-ordinate activities with Xact.

Note 2: An applicant's evidence will not be assessed until all evidence listed in the ECP has been received.

Note 3: Evidence from recent courses can be used, if assessed to qualification assessment criteria.

3. RPL Process

Note 4: If an applicant is unable to demonstrate competence, their co-ordinator will be consulted to identify options to achieve competence.

5. Professional discussion

Most professional discussions are completed by telephone. The purpose of the discussion is to clarify and discuss areas not presented in the evidence submission.

Notes

Note 1: Applicants are contacted to agree a date and time for the professional discussion.

Note 2: Applicants are given prior notice of areas for discussion.

6. Internal verification

To ensure that:

- a) evidence is valid, reliable and assessment criteria has been achieved
- b) process complies with awarding body and OFQUAL standards

7. Qualification issue

Once evidence has been assessed and verified as “passed”, approved assessment centre will notify awarding body of results.

Awarding body issues qualification which, with evidence submission, is sent to co-ordinator for distribution to delegates.

4. RPL Fees

4. RPL Fees

The fees for the RPL process are:

RPL process

Application (non-refundable)	60.00
Issue of RPL Plan, assessment and telephone interview ¹	500.00

Awarding Body fees

Qualification	60.00
Unit accreditation (per unit) ²	25.00

Notes

Note 1: ¹When the full qualification is not being assessed by RPL (Unit accreditation), full fees may be reduced depending on how many units are being assessed. Contact Xact for a quote.

Note 2: ²Unit accreditation fees only apply when not all units are being assessed by RPL e.g. a fee for those not working towards the complete qualification, but wish to receive an awarding body certificate confirming they have successfully completed a unit.

Note 3: Qualification fees are correct at time of press but are reviewed annually by awarding bodies. Customers will be charged at current rate by awarding bodies. Please be aware that qualification fees are subject to change.

Note 4: Fees are based on the following assumption:

- a) Applicant has access to relevant reading material
- b) Applicant can provide evidence from workplace activities relevant to unit assessment criteria
- c) Applicant can attend a professional interview at an agreed location if required
- d) When appropriate, the applicant's organisation will co-ordinate activities between Xact and applicant

Note 5: Fees include telephone discussion, evidence collection plan, evidence collection guides, portfolio assessment, qualification and awarding body fees

Note 6: Additional charges may be incurred if more than one re-submission for evidence is required

Note 7: Additional charges will be incurred when additional learning/development is required e.g. to attend a course due to a learning need

Note 8: An invoice will be issued and is due for payment before the process commences

Note 9: Fees are shown in pounds sterling

Note 10: VAT will be added at the current rate

5. Company details

5. Xact Consultancy and Training Limited

Company Registration No: 05295715
VAT Registration No: 855 4570 04
Web site: www.xact.org.uk
Email: info@xact.org.uk

Insurance

Xact are insured for:

Public and Employers Liability
Professional Indemnity

Office

Telephone: 01386 277980
Fax: 0845 0941 887
Address: 3 Abbey Lane Court
Evesham
Worcestershire
WR11 4BY

Contact

Trevor Norwood: 01386 277980
Email: trevor.norwood@xact.org.uk
Alan Sayers: 01386 277980
Email: alan.sayers@xact.org.uk