The Blackhouse Charters are amongst the most significant land ownership and property documents in the UK. They cover an impressive timespan extending between the reigns of King Robert the Bruce (1306 -1329) and Queen Anne (1702 – 1714). As such they constitute one of the greatest treasures of the Archive Services and their preservation is paramount. The collection of 499 documents is currently undergoing a conservation programme. Each of the documents requires a detailed condition assessment and then depending on its state, it is either repacked or subjected to treatment.

Many of the documents were executed on parchment. My project focuses on this medium. It was my task to prepare condition reports of thirty parchment documents. I was also responsible for repacking them. Damage assessment is a complex process, many changes are not obvious at first sight and some destructive processes remain invisible to a naked eye. Non-invasive examination techniques such as UV light, raking light examination and microphotography supported my work.

Collagen is a mechanically and chemically processed animal skin. It consists of collagen which is the dominant animal connective tissue. Collagen is a polymer composed of about twenty amino-acids of which the most characteristic three are glycine, proline and hydroxyproline. A single molecule of collagen forms a triple helix consisting of three basic chains of amino-acids linked by peptide bonds.

There are several factors influencing parchment deterioration. Moisture leads to gelatinisation and mould growth. Dry environmental results in irreversible embrittlement. Exposure to sunlight leads to photodegradation and acidic atmosphere may cause oxidation of collagen molecules.

The ultra violet light examination is a useful way of revealing otherwise invisible changes. Repairs and retouches emanate a strong vivid glow and the presence of moulds and fungi can be confirmed by their characteristic purple or orange fluorescence. Remnants of old paper wrapping could be seen as light white specks.

The ultra violet light examination is a useful way of revealing otherwise invisible changes. Repairs and retouches emanate a strong vivid glow and the presence of moulds and fungi can be confirmed by their characteristic purple or orange fluorescence. Remnants of old paper wrapping could be seen as light white specks.

Parchment is a mechanically and chemically processed animal skin. It consists of collagen which is the dominant animal connective tissue. Collagen is a polymer composed of about twenty amino-acids of which the most characteristic three are glycine, proline and hydroxyproline. A single molecule of collagen forms a triple helix consisting of three basic chains of amino-acids linked by peptide bonds.

Damage to the parchment and seals can be caused by a number of physical and chemical factors. Collagen is vulnerable to humidity. When exposed to excessive amounts of water it undergoes hydrolysis resulting in irreversible gelatinisation. Gelatinised parchment is very stiff, discoloured and translucent.

Collagen Triple Helix

Glycine

\[
\text{G}: \text{H}: \text{N}: \text{O}_2
\]

Proline

\[
\text{C}: \text{H}: \text{N}: \text{O}_2
\]

Hydroxyproline

\[
\text{C}: \text{H}: \text{N}: \text{O}_3
\]

Strongly gelatinised edge of BL.360. Yellow diagonal line visible above resulting from folding the parchment. Photo taken with a digital microscope (50x)

The ultra violet light examination is a useful way of revealing otherwise invisible changes. Repairs and retouches emanate a strong vivid glow and the presence of moulds and fungi can be confirmed by their characteristic purple or orange fluorescence. Remnants of old paper wrapping could be seen as light white specks.

Wax seals often suffer from mechanical damage. Too much pressure, high temperatures, inaccurate handling and inappropriate storage conditions may result in cracks, staining and flattening of the relief. Although the seal may initially seem intact those factors slowly wear the wax down.

Damage to the parchment and seals can be caused by a number of physical and chemical factors. Collagen is vulnerable to humidity. When exposed to excessive amounts of water it undergoes hydrolysis resulting in irreversible gelatinisation. Gelatinised parchment is very stiff, discoloured and translucent.

The ultra violet light examination is a useful way of revealing otherwise invisible changes. Repairs and retouches emanate a strong vivid glow and the presence of moulds and fungi can be confirmed by their characteristic purple or orange fluorescence. Remnants of old paper wrapping could be seen as light white specks.

Not all holes and openings are damage. Some are of natural origin and some are an outcome of manufacturing process. Shape, texture of the edges and the flow of text indicate the nature of the opening. Maker’s hole resulted from stretching the parchment during scraping phase.

Repacking the parchments into custom made, archival quality folders ensures safe and spacious storage conditions. Mounting parchments onto individually prepared boards not only contributes to their preservation, but also makes parchments easier to handle and ready for museum display should such necessity arise. New packaging meets expectations of various parties: archivists, conservators and curators.

Repairs and retouches emanate a strong vivid glow and the presence of moulds and fungi can be confirmed by their characteristic purple or orange fluorescence. Remnants of old paper wrapping could be seen as light white specks.

Not all holes and openings are damage. Some are of natural origin and some are an outcome of manufacturing process. Shape, texture of the edges and the flow of text indicate the nature of the opening. Maker’s hole resulted from stretching the parchment during scraping phase.

Author securing the BL.390 seal with strips of plastazote.

Strongly gelatinised edge of BL.360. Yellow diagonal line visible above resulting from folding the parchment. Photo taken with a digital microscope (50x)

There are several factors influencing parchment deterioration. Moisture leads to gelatinisation and mould growth. Dry environmental results in irreversible embrittlement. Exposure to sunlight leads to photodegradation and acidic atmosphere may cause oxidation of collagen molecules.

During the course of the placement I have gained a number of skills including object handling, condition assessment, applying modern object examination methods and package preparation and repacking. I have also gained theoretical understanding of the parchment medium.