Dr. Caroline Sturdy Colls
Centre of Archaeology
Staffordshire University
Science Centre
Leek Road,
Stoke-on-Trent
ST4 2DF
+44(0) 1782 295930
c.sturdy-colls@staffs.ac.uk

Rohatyn Jewish Heritage
rohatynjewishheritage.org

21st July 2016
Our ref: ST16-078

Dear Jay and Marla,

Re: Request for Proposal for Non-Invasive Archaeological Research to Define the Boundaries of WWII Mass Grave Sites in Rohatyn, Ukraine

Thank you for allowing Staffordshire University to provide you with a proposal for the survey of Holocaust-era mass graves in Rohatyn, Ukraine. Thank you also for providing such a comprehensive review of the World War II history of Rohatyn and the locations in which the mass graves are believed to be located.

Based on the information that you provided and initial desk-based research, I have designed a project proposal which I believe will provide the greatest chance of locating the boundaries of the mass graves described in your request letter. In preparing this proposal, I have taken into consideration the need to locate and protect the mass graves, whilst also ensuring that they are not disturbed in the process of doing so. Hence, I recommend a non-invasive approach to their investigation. In-keeping with the Rohatyn Jewish Heritage project and the local commitment to the protection of the mass graves and cemeteries in Rohatyn, I also recommend an approach that facilitates the involvement of local leaders and volunteers. The full proposal is provided in below.

The project costing, totalling £16,717, includes costs to carry out archival research and fieldwork, and to write a report at the end of the project. A breakdown of the costs and any exclusions is included in this letter. A supplemental costing of £2,100 has been provided as requested for fieldwork in the Jewish cemetery, if you elect to include that research immediately following the primary fieldwork at the southern and northern memorial sites.

I hope you find this proposal suitable and I look forward to hearing from you soon. If there are any aspects of the brief that you would like to be amended, then do let me know. In addition, the University requires a formal contract to be arranged outlining the terms of the funding prior to the transfer of funds and commencement of the work. Within this contract we would wish to include a payment schedule that suits you and a schedule for the work. Please note, that due to other project commitments, the earliest date the work could be completed would be Spring 2017. I look forward to discussing the proposal with you further. Please let me know if I can be of any further help.

Dr. Caroline Sturdy Colls
Associate Professor and Research Lead, Centre of Archaeology

1. SUMMARY

As per instruction from Rohatyn Jewish Heritage in a Request for Proposal (RFP) dated 1st June 2016, the Centre of Archaeology at Staffordshire University hereby provides a project proposal and costing to undertake archaeological fieldwork to locate unmarked mass graves in Rohatyn in Ukraine. This document also includes a review of the various conditions that will need to be met before further research and fieldwork can proceed, and a number of requests for assistance from the Rohatyn Jewish Heritage project team. An overview of the expertise of the Staffordshire University project team is also included as requested.

2. PROJECT BRIEF AND AIMS

On the 1st June 2016, Dr Caroline Sturdy Colls at Staffordshire University received a Request for Proposal (RFP) from Rohatyn Jewish Heritage. This proposal outlined how, during the Second World War, the Jewish population of the town was systematically persecuted by the Nazis and their collaborators. Specifically 'in several actions through 1942 and 1943, thousands of Jews from Rohatyn's ghetto were variously deported to Belz?ec, shot on the streets, shot in the hospital, or marched to pits at the edges of town and shot, then buried in mass graves'. The proposal provided a comprehensive summary of the history of mass violence against Jewish citizens in Rohatyn and documented the uncertainty surrounding the locations of the mass graves in which they were reportedly buried. In order to scientifically determine the locations of these mass graves and investigate claims made by witnesses with regards to potential unmarked burial sites, this RFP invited Staffordshire University to prepare a proposal for an archaeological investigation of several sites in Rohatyn.

The RFP identified three potential burial sites within the town. A fuller description of these areas is provided in the RFP, but in summary:

- The southern memorial markers – In an area of farmland to the south-east of Rohatyn, a post- war memorial indicates the purported location of a mass grave. However, the RFP observes that survivors disagree about the location of the mass killings and burials in this area;
- The northern memorial markers – In an industrial area to the north of the town, a second memorial marks the purported location of a mass grave. The discovery of human remains by workers constructing a greenhouse approximately 20 years ago suggests that unmarked burial sites may exist in this area;
- The "new" Jewish cemetery – The RFP observes that one witness testimony refers to Jews being

rounded up and executed in the Jewish cemetery to the north of Rohatyn.

Based on observations made from the RFP and initial desk-based research, this document proposes a programme of archaeological work in Rohatyn that aims to:

- perform non-invasive archeological research and analysis at the southern and northern WWII-era mass grave sites in Rohatyn, Ukraine;
- clearly define the physical boundaries of the actual burials at those sites and to provide an estimate of the uncertainty of boundary locations at each site if they cannot be established;
- publish a report containing the data and results of the analysis, and the conclusions drawn.

At the request of Rohatyn Jewish Heritage, a supplementary project, exploring the possibility that mass graves may exist in the Jewish cemetery to the north of the town is also described below. Should this project be approved, it too would have the aims described above.

3. METHODOLOGY

3.1. A NON-INVASIVE APPROACH

In order to achieve the project's aims, a non-invasive archaeological investigation is proposed. This methodology has been developed based on well-established principles founded as part of the project lead's ongoing research at Holocaust sites across Europe[1], and based on the unique circumstances of the project (as outlined in the RFP). Utilising a range of advanced surveying methods in conjunction with archival research will facilitate a detailed investigation of potential mass graves, culminating in new insights into the extent and nature of mass violence in Rohatyn. A non-invasive approach will also allow necessarily large areas of land within each of the survey areas (described below) to be examined and offer the opportunity to locate mass graves without disturbing the ground. The latter is essential in order to comply with Halacha Law, which strongly discourages the disturbance of human remains buried within a grave.[2] The proposed methodology has also been designed with the wishes of the descendants of those who perished in Rohatyn in mind in that it seeks to locate and record unmarked mass graves with a view to facilitating the marking, protection and commemoration of them in the future.

It is recommended that the following methods are utilised at all of the three potential mass grave sites to

fully meet the aims of the project. Further information about each of the methods and approaches can be found in Chapters 5-7 of *Holocaust Archaeologies: Approaches and Future Directions* and the proposed fieldwork would draw upon the unique, interdisciplinary approach outlined in this volume:

Desk-Based Assessment

A thorough desk-based assessment is proposed in order to review the witness testimonies, documents, maps, photographs, aerial imagery, satellite imagery and other archival sources already sourced by Rohatyn Jewish Heritage. This review will be undertaken in line with guidance provided in *Holocaust Archaeologies: Approaches and Future Directions* and that provided by the Chartered Institute for Archaeologists.[3] A summary is provided in Figure 1 below. As observed in *Holocaust Archaeologies: Approaches and Future Directions*, archaeologists can utilise historical materials to inform search locations, reveal new information about the extent and nature of violence, and provide new insights into body disposal practices.[4] Conducting such a review as part of this project would therefore be essential and extremely beneficial given the uncertainty surrounding the locations of mass burials relating to several massacres in Rohatyn. Additional archive research will be undertaken by the project team in order to source new material, where possible (within the budgetary and constraints of the project). This phase of the project will also involve in-depth analysis of the wartime aerial images and maps of Rohatyn, all of which will be assimilated into a Geographical Information System (GIS) (see below) to facilitate the analysis of burial indicators visible from the air and a review of how the landscape at each of the sites to be surveyed has evolved over time. Further information about the ways in which the project team will analyse this material can be found in Chapter 5 of *Holocaust Archaeologies: Approaches and Future Directions*.

Table 5.1 Suggested methodology for conducting desk-based assessments in advance of archaeological fieldwork at Holocaust sites. (Copyright: Caroline Sturdy Colls)

Suggested methodology for desk-based assessments		
Rationale:		
This methodology will allow the following to be derived:		
Information concerning the historical context of the site in question, e.g. why and how it was constructed, who administered it and how it fitted into the Nazi regime as a whole		
Information concerning the known or 'official' histories of the site in question		
Material concerning the extent and nature of site in question (in the past and present)		
Material that can be compared to archaeological data		
Methods/techniques used	*Sources used*	*Outputs*
(a) Documentary research	(a) Scholarly research and historical records located in worldwide archives and libraries including but not limited to witness accounts, plans and architects' drawings; administrative documents, letters, notices, drawings, court transcripts and other evidential material; reports of post-war investigators	(a) Analysis and presentation of primary research material; comparisons of witness plans; cross-reference key dates and information with aerial photographic analysis (below); overlay plans onto aerial images; identify likelihood that features will survive below the ground; identify possible locations of features
(b) Cartographic analysis	(b) Maps (contemporary and modern)	(b) Georectification of maps with other data types (historical and archaeological); map regressions using historic, contemporary and modern maps
(c) Photographic analysis	(c) Ground-based photography; aerial reconnaissance (contemporary and modern); satellite imagery	(c) Dataset of georectified aerial images (contemporary and modern); annotated aerial images; annotated satellite imagery; 3D visualisations of ground-based imagery and aerial images
(d) Analysis of video footage	(d) Video footage recording during World War II and afterwards, including that created by post-war investigators and documentary filmmakers	(d) Identification of possible features and their locations, e.g. structures, mass graves and boundaries; analysis of practices of post-war investigators
(e) Analysis of other forms of media and art	(e) Examples include sculptures, artwork, drawings and models	(e) Identification of the appearance of individual sites and structures. Analysis of stories/events to which the physical evidence relates

Figure 1

Landscape and Topographic Survey

Landscape and topographic survey will be undertaken using a combination of Global Positioning Systems (GPS) and Total Station Electronic Distance Measurers (EDM). These devices have the ability to record exact locations on the earth's surface by a combination of satellite signals and laser technology, and to produce 2-D and 3-D maps, plans and elevation models. This allows survey grids and walkover survey results to be plotted on digital images and maps extremely accurately, which in addition can be migrated to any international co-ordinate system. This technology also can be utilised to complete sub-millimetre topographical surveys of smaller areas to highlight any depressions or mounds which may be associated with buried features that are too small to identify with naked eye. As the primary purpose of the Rohatyn Jewish Heritage project is to define the location of the probable boundaries of the Rohatyn mass graves (in a form suitable for use by Rohatyn city engineers and others for the eventual development of boundary-protecting memorials at the sites), the use of Global Positioning Systems (GPS) will ensure that precise geographic

coordinates linked to a reference network can be provided. This information will be contained with the final project report and can be provided in the form of a GIS file, .kml/kmz file or other type of digital file compatible with the Rohatyn city engineers' planning software if required.

Ground Penetrating Radar (GPR)

Once visible remains or indicators above the ground have been recorded, it will be necessary to investigate what remains are buried below ground. Archaeologists now have a number of geophysical methods at their disposal in order to record buried remains. Different geophysical techniques are suited to different investigations based on the nature of the terrain being examined, the nature of the remains being sought, the overall aim and timeframe of surveys, and whether two- or three dimensional data is required.

The use of Ground Penetrating Radar (GPR) is strongly recommended for use at the proposed sites in Rohatyn in order to map (in as much detail as possible) any mass graves. GPR can assist with the characterization of buried remains by recording reflections or attenuations of electromagnetic (radar) signals that are continuously emitted from a roving antenna. These reflections or attenuations are affected by the physical properties of the subsurface and any buried features within it. These reflections are then recorded and visualized in two- and three-dimensional data plots that can be analysed in order to determine the presence, size and nature of buried remains. An advantage of GPR is that the signal emitted can propagate through most materials and, therefore, this method can be used over concrete and in rural areas, providing the vegetation is not too high and there are not too many obstructions. This is a necessary trait for the proposed sites in Rohatyn given their diverse ground cover.

Data Assimilation and Analysis

The results from the fieldwork will be processed using a number of software packages including Radan (GPR), Geo Office (Surveys), and Leica Geo Suite (GPS). Utilising state of the art Geographical Information Systems (GIS) programmes, the results will be integrated into a single resource which also includes the collated material from the desk-based analysis phase. This will allow site interpretation to be completed by comparing all of the data sets – for example the locations of the survey grids for the GPR surveys will be accurately placed onto contemporary aerial images to help with the analysis of the survey results. It is recommended that the methodology is adapted to meet the specific circumstances of each of three survey areas in the following ways:

3.2. THE SOUTHERN MASS GRAVE MARKERS

A review of the RFP provided by Rohatyn Jewish Heritage and initial desk-based research revealed uncertainly regarding whether the memorial accurately indicates the position of a mass grave under the southern memorial markers. There is also the suggestion that there may have been more than one mass grave located here, thus presenting the possibility that one or more graves may be unmarked and unprotected. Given the uncertainly surrounding the location, nature and extent of burials in this area, further research is clearly needed. The following methodology is therefore proposed for this area:

A detailed non-invasive survey of the area surrounding the southern memorial markers is recommended. In order to incorporate the disturbed areas of soil visible in aerial images of the site, taken by the Luftwaffe in 1944, a survey area of approximately 125m x 45m is proposed. This survey area may be extended during the fieldwork at the discretion of the archaeological team based on initial results.

Within this survey area, a Differential Kinematic GPS will be used to accurately record the positions of geophysical survey grids, the memorial, pathways/roads/tracks, differing vegetation and other visible above-ground features. This data can then be presented within a Geographic Information System (GIS) platform for comparison with modern and historic maps and aerial photographs. Ground Penetrating Radar (GPR) survey will then be undertaken across as much of this area as is accessible in order to record and identify any buried remains. This will facilitate the creation of a three-dimensional record of the survey area as well as two-dimensional data plots that can be overlaid onto modern and historic maps, aerial photographs and other survey data within the aforementioned GIS platform. The findings will then be compared to information provided by witnesses, documents and other archival materials collated during the desk-based assessment phase of the project. This will provide the best chance of confirming whether burials exist within this area, determining their exact location and documenting their overall dimensions (length, width and depth). These findings will be documented in the final project report and coordinates provided to enable any confirmed graves to be marked in the future in line with the Rohatyn Jewish Heritage project's aims.

A review of the RFP revealed the following specific issues that need to be borne in mind in relation to the southern memorial area prior to and during implementation of the aforementioned methodology:

- The proposed survey area is located in farmland. Ownership of the land needs to be established prior to arrangements being made for fieldwork (see also Section 4) and the potential for inhibitive vegetation or crops to be present must also be evaluated as soon as possible (see Section 4);
- The plants and railings that form part of the memorial will prevent total coverage of this area with

the GPR. However, as much data as possible will be collected on and around the existing memorial in order to determine whether a mass grave lies entirely or partially underneath it (subject to permission being granted for this; see Section 4). Extreme caution will be taken not to disturb or damage the memorial during fieldwork;

- The landscape change that has occurred in this area will need to be evaluated during the desk- based assessment phase of the project. As the area appears to have historically been farmland, determining the exact nature of these changes may prove difficult as they may not have been documented.[5] Although the Staffordshire University team will evaluate this if the project proceeds, should the Rohatyn Jewish Heritage team be able to source any additional information locally in this regard, it would be appreciated.
- Expected Survey Time: 3 days

3.3. THE NORTHERN MASS GRAVE MARKERS

As with the southern memorial site, the RFP states that the accuracy of the memorial markers in this area is not clear. Additionally, the discovery of human remains approximately 20 years ago by workers constructing a greenhouse and witness statements suggest that further burials may exist in this area. The methodology outlined above will be followed in this area in order to record and identify any buried remains. This will facilitate the creation of a three-dimensional record of the survey area as well as two-dimensional data plots that can be overlaid onto modern and historic maps, aerial photographs and other survey data within the aforementioned GIS platform. The findings will then be compared to information provided by witnesses, documents and other archival materials collated during the desk-based assessment phase of the project. This will provide the best chance of confirming whether burials exist within this area, determining their exact location and documenting their overall dimensions (length, width and depth). These findings will be documented in the final project report and coordinates provided to enable any confirmed graves to be marked in the future in line with the Rohatyn Jewish Heritage project's aims.

A review of the RFP provided by Rohatyn Jewish Heritage and initial desk-based research revealed that this investigation will likely be more logistically challenging than the southern site due to the following issues:

- The industrial nature of the site
- The current land use
- The changes and developments of this land over time.

Due to these issues, although the areas open to investigation is reduced, we estimate the survey will still take 3 days to complete. It is essential that the site team make a site visit to the northern site at the start of the fieldwork to identify areas which are available to survey, or that can be made available to survey after ground clearance and vegetation removal has taken place. It may be necessary to move any spoil heaps or brick depositions which are located inside the study area. It would be of benefit if these tasks can be completed by local support/labourers whilst the archaeological team is working on the southern site. Advice on this will be given to the local labourers during the proposed site visit.

The following issues also need to be considered:

- Ownership of the land needs to be established prior to arrangements being made for fieldwork (see also Section 4);

- The plants and railings that form part of the memorial will prevent total coverage of this area with the GPR. However, as much data as possible will be collected on and around the existing memorial in order to determine whether a mass grave lies entirely or partially underneath it (subject to permission being granted for this; see Section 4). Extreme caution will be taken not to disturb or damage the memorial during fieldwork;
- Within this survey area, a Differential Kinematic GPS will be used to accurately record the positions of geophysical survey grids where possible. The standing buildings close to this site may impact upon the satellite signals during the survey. If this occurs the survey recording will be completed using the EDM Total Station.
- It is of importance that this survey also records modern features in the landscape which may have an effect upon the GPR results, such as modern services for gas or electricity, areas of car parking, industrial or construction waste or other buried features.

3.4. JEWISH CEMETERY

The RFP indicated that one known testimony suggests that there may have been a mass grave within the "new" Jewish cemetery to the north of Rohatyn. The cemetery is also known to have been desecrated during World War II and since. During the Holocaust, the Nazis carried out cultural genocide in Jewish cemeteries - in the form of toppling matzevot, removing them for use in building works and desecrating graves - as a means of erasing and persecuting Jewish communities. Some cemeteries were also then subsequently used as execution sites. Based on the project team's observations concerning cultural and physical genocide in other

Jewish cemeteries in Europe, a survey of the site would likely reveal new insights into the crimes perpetrated against the Jewish community in Rohatyn and allow claims regarding mass graves to be investigated. If a mass grave(s) was identified, archaeological investigation would allow its exact perimeters to be established, thus allowing it to be marked and protected in the future.

If the survey was to proceed, additional desk-based research concerning the cemetery is advised in order to:

- determine whether any further witness testimonies or written evidence of mass burials exists;
- analyse aerial images of the site in more detail;
- carry out a map regression of the cemetery;
- locate archive materials relating to both cultural and physical genocide in the cemetery.

Based on this research, a decision could then be taken regarding whether to proceed with an in-field investigation and exactly where to locate the Ground Penetrating Radar survey grids.

If the survey was to proceed, it is recommended that evidence of cultural and physical genocide within the cemetery should be sought and recorded using a combination of photography, DGPS/Total Station recording and GPR, as outlined in the methodology above. Specifically, GPR would be used to identify whether any mass graves exist within the cemetery area and to determine the locations of pre-war Jewish graves whose matzevot are predominantly no longer in situ. This would result in data plots identifying the locations of any identified burials and coordinate information which would allow them to be marked in line with the Rohatyn Jewish Heritage project's aims.

When developing this proposal, the advice provided about this site in the RFP was borne in mind. The RFP stated that, as this site is protected to a greater extent than the other two potential mass grave sites, and because of the sparse nature of information about potential burials there, research should be considered separately to the main research programme. Hence, a separate costing for this element has been included later in this document.

Prior to undertaking fieldwork in the Jewish cemetery, the following issues need to be considered:

- Permissions need to be obtained from the rabbinical authorities in Rohatyn to access and carry out archaeological works in the cemetery. Separate permissions for undertaking archaeological works may also be required (See Section 4).

- The methodology proposed is deliberately non-invasive in order to comply with Halacha Law and to prevent disturbance to all burials within the cemetery. Although rabbinical supervision will likely not be required (as noted in the RFP), prior to the commencement of fieldwork, discussions concerning the methodology will be had with the Rabbi of Ivano- Frankivsk to confirm this and to take advice on its implementation.
- Estimated Survey Time: 2 days.

As part of an ongoing commitment to documenting Holocaust killing sites, Dr Caroline Sturdy Colls is currently supervising a PhD focused on mapping and disseminating information about sites of mass violence that exist outside of Nazi camps. This doctoral project, undertaken by Czelsie Weston (one of the proposed assistants on the project), will use explore several Jewish cemeteries in Poland along with a number of other potential mass execution sites.

Additionally, the Centre of Archaeology has recently received funding to work on a project entitled "Recording Cultural Genocide and Killing Sites in Jewish Cemeteries", from the International Holocaust Remembrance Alliance. The project is a collaboration between Staffordshire University, The Matzevah Foundation and Fundacja Zapomniane. This project will raise awareness of the causes and consequences of cultural and physical genocide (using Jewish cemeteries desecrated by the Nazis as a pilot case study), directly tackling racism, xenophobia and hostility in the present. This will be achieved by: (1) Conducting new research into relationships between the destruction of property by Nazis and their collaborators, and the use of religious spaces as killing sites; (2) Undertaking a series of "social action projects" at selected Jewish cemeteries where cultural and physical genocide occurred in the past, and where neglect and vandalism is occurring presently. (3) Disseminating the results of (1) and (2) via a state-of-the-art digital platform. The project will adopt a unique interdisciplinary methodology to achieve its aims, utilising techniques from history, archaeology, digital humanities, conservation and community engagement. Although this pilot project focuses on sites in Poland, in the longer term the project team would like to extend this research to incorporate other sites in other countries in Europe. Hence, the Centre of Archaeology would be interested in discussing a potential longer-term collaboration whereby the Jewish cemetery in Rohatyn could be investigated in more detail than the proposal outlined above allows for and whereby digital tools for public dissemination would also be produced. This work would require substantial additional funding and so discussions would need to ensue concerning how this funding might be secured.

3.5. PUBLIC ENGAGEMENT

It is evident from the RFP and from additional research concerning Jewish Heritage in Rohatyn that the descendants of Jews that lived in Rohatyn are extremely committed to ensuring that the crimes perpetrated during World War II are not forgotten and that the burials of their ancestors are protected. It is also evident that many members of the local community are committed to ensuring that known sites are protected and to recovering the memory of the once thriving Jewish community. Therefore, the archaeological team would gladly welcome the input of descendents and local volunteers in the proposed fieldwork. The archaeological team would also be willing to assist in disseminating the results of the project as widely as possible after the conclusion of the fieldwork.

In order to ensure a safe working environment for the project team, volunteers would be required to work under the instruction of the archaeological team at all times and to comply with University Health and Safety Guidelines. A separate policy regarding these terms will be drawn up should the project proceed.

4. PERMISSIONS AND OTHER REQUIREMENTS

In order to carry out the survey in a way that respects local and religious law, a number of requirements described below need to be met in advance of fieldwork. Other requirements described below include practical aspects to facilitate the smooth implementation of the proposed methodology:

4.1. LEGAL PERMISSIONS

In order to undertake archaeological work in Ukraine, a number of legal conditions must be met and formal permission must be received from an appropriate cultural heritage body prior to any travel bookings or other arrangements for fieldwork being made.

The *Law on the Protection of Cultural Heritage of Ukraine* defines that the protection of sites or remains of archaeological and/or cultural heritage significance are the responsibility of the state. *Article 35.1* of this Law stipulates that:

> "Licenses for conducting land (underwater) job in the territory of battle places, places of battleships destructions, sea and river vessels, places of burial of dead and dead (lost) military, servicemen (including foreigners), which were killed in the wars in the

consequence of deportation and political repressions at the territory of Ukraine, are issued according to programs, approved by appropriate cultural heritage protection body".

Article 35.4 also states that the "use of metal sensors or any other search equipment or appropriate technology at the objects of cultural heritage is allowed only in presence of license for their use and is the subject to registration in appropriate cultural heritage protection body". As the methodology described above utilises non-invasive search equipment, such clauses would apply. If the sites to be investigated are deemed to be cultural objects according to this law then, in order for the archaeological work to proceed, an "Open Letter" must be issued to the project director by the Institute of Archaeology of the National Academy of Sciences in Ukraine. Upon the formal commissioning of the project, Staffordshire University will undertake additional research to determine whether this is necessary and provide the necessary material needed to acquire this letter, which will include a copy of the proposal and documents demonstrating the qualifications of the archaeological team.

It should be noted that, in the past, it has been necessary for archaeologists working for state organisations (museums, universities, government-led organisations such as the Institute of Archaeology of the National Academy of Sciences) in Ukraine to actually undertake the work under the direction of the lead archaeologist to whom permission has been granted.[6] It is unclear at this stage as to whether this is the case for survey projects (as opposed to excavations) and so it is recommended that contact is made with the Institute of Archaeology of the National Academy of Sciences in order to discuss this matter further as soon as possible.

Once the archaeological work has been approved, the following elements of the law states that it is the responsibility of those carrying out the archaeological work:

- "to secure preservation of discovered objects of cultural heritage during the research;
- in due time to present a report on the research to the bodies, which issued license and qualification document;
- to pass all the founded during the research subjects, connected with immovable objects of cultural heritage (anthropogenic, anthropologic, paleozoologic, paleobotanic and other objects, which have cultural value), for permanent preservation to the institution, determined in the license for including to the state part of museum reserves of Ukraine;
- to pass field documentation and report on conducted job to archive subdivision of state

scientific institution, according to the procedure, determined by the legislation;

- to secure proper conservation of cultural heritage objects, which have cultural value, ordering the territory after the completion of job and in case of necessity – to take part in the preparation of mentioned objects for exposure, and connected with them materials – for their state registration as monuments" (*Article 35.2*).

The *Law on the Protection of Archaeological Heritage* (2004) includes a specific mention of human remains. Additional regulations were adopted into this law in 2008 concerning the procedure following the discovery of human remains and their long-term protection. As this project will not include excavation, many of the clauses in this legislation will not apply. However, it is deemed likely that any "Open Letter" providing permission to undertake the proposed research would stipulate that the state must be informed of the results of non-invasive research, including the locations of any prospective burial sites identified using geophysical methods.

If the proposed project proceeds, additional advice will be sought on the legal requirements by Staffordshire University and work will proceed only in accordance with the country's legal framework.

4.2. LOCAL AUTHORITIES, RELIGIOUS LEADERS AND COMMUNITY STAKEHOLDERS

It is recommended that a copy of the archaeological proposal should be provided to the local government, religious leaders and other stakeholders to inform them of our intention to carry out the archaeological investigation. Obtaining local support for the project is deemed vital as a courtesy to the local community, in order to ensure that the project aims regarding education and commemoration can be adequately met, to ensure that the project implementation can run smoothly and so that the project can benefit from any knowledge they have concerning the sites to be investigated. Again, this should be completed prior to arrangements being made for fieldwork. A discussion between Dr Caroline Sturdy Colls and the Rohatyn Jewish Heritage team is recommended at the first opportunity (after a formal decision is made to proceed with the project) in order to identify a list of stakeholders who should be informed and, where possible, involved in the project in accordance with the approach to public engagement outlined in the methodology section of this document.

The proposed methodology has been designed to comply with Halacha Law, based on previous experience of the project lead and advice from rabbinical authorities on the subject.[7] Once formal arrangements have been made for the commencement of the project, the proposed methodology will also be discussed in more detail

with religious leaders in Ukraine in order to ensure the final project plan meets the required standard.

4.3. LANDOWNER PERMISSIONS

The project brief specifies that the exact owners of the land in which the two southern mass graves are believed to be located are not yet known. The ownership of these and the other areas to be surveyed must be established as soon as possible and the archaeological team asks for Rohatyn Jewish Heritage to assist in doing this. Landowners should be approached to secure their permission to enter and undertake the techniques described above. I would be more than happy to assist in the acquisition of these permissions by providing a formal project proposal suitable for public dissemination. Given the existing contacts of the Rohatyn Jewish Heritage Project team, if translation assistance and local liaison with the landowners could be provided, this would be very much appreciated. A signed copy of the project proposal and an agreement form should be returned to Dr Caroline Sturdy Colls at Staffordshire University to demonstrate that landowners grant their permission for the work to proceed. Once again, travel bookings and arrangements for fieldwork cannot be made until these permissions have been received.

4.4. VEGETATION REMOVAL

Because of the variation in vegetation that can be caused by the presence of mass graves and other buried remains, it is preferable that vegetation is left as is until the archaeological team have conducted an initial walkover survey of the sites (see methodology section for details). Once this initial survey is completed and any vegetation change has been mapped, the vegetation will need to be cut. To facilitate ease of access with the Ground Penetrating Radar, a height of no more than 5cm is requested. All cut vegetation will need to be cleared from the sites. The archaeological team can assist with the vegetation clearance to ensure that it meets our needs. However, it would be preferable to have some additional assistance from local labourers if possible and tools would need to be provided locally.

It has been observed from an analysis of recent aerial photographs of the sites that the proposed survey areas will stray into farmland. This means that permission to access these areas and to cut crops (if required) will need to be acquired as outlined in Section 4.3 above. As it will not be possible to conduct a GPR survey in areas containing crops, it will be necessary to determine the nature of these crops in order to either: (a) schedule fieldwork for after the harvesting of the crops, or (b) arrange for the crops to be cut/burnt prior to the usual harvest. As Rohatyn Jewish Heritage have informed us that the latter would require compensation to be paid to the farmers, it is important to establish this as soon as possible. No funds for reimbursement

have been included in the current project costing.

5. SCHEDULE

5.1. CONFIRMING THE SCHEDULE

The schedule for fieldwork and report delivery will be confirmed with Rohatyn Jewish Heritage once a decision has been taken to move forward with the project. The archaeological team will endeavour to complete the work as soon as possible. Accounting for pre-existing project commitments and weather conditions in Ukraine, the first available opportunity to conduct the work will be Spring - Summer 2017. It is necessary to ascertain the circumstances surrounding the crops growing on the sites to be investigated before an exact timeframe can be determined. Once Rohatyn Jewish Heritage have established this, they are invited to discuss this at their earliest convenience with Dr Caroline Sturdy Colls so that a firm project schedule can be determined and set in motion.

5.2. SECURITY AND TEAM SAFETY

Pursuance of the in-field elements of the methodology in this proposal are contingent upon the team's ability to travel safely to and within Ukraine. Staffordshire University will follow the advice of the UK Foreign and Commonwealth Office (FCO) at all times with regards to travel. Current guidelines do not advise against travel to the region surrounding Rohatyn but do advise caution when travelling to any part of Ukraine: https://www.gov.uk/foreign-travel-advice/ukraine. These guidelines will be monitored if the proposed project proceeds and up to the point of travel. If, at any point, Staffordshire University deems that there is a threat to the health and safety of its staff, fieldwork will be cancelled and/or rearranged if it is safe to do so. The terms and conditions relating to security and team safety will be discussed further should the project proceed and an official contract will need to be created regarding this.

6. THE RESEARCH TEAM

6.1. STAFFORDSHIRE UNIVERSITY

With a history of teaching, research and knowledge transfer dating back to 1901, Staffordshire University has a long and proven track record in undertaking pioneering research and providing informative, cutting-edge and stimulating training to a variety of audiences. The University has 16,000 on-campus students and a further 5000 distance and work-based learners. We have taken part in many successful international projects

through funding programmes such as FP6/7, Horizon 2020, and Erasmus. The University hosts four faculties (Business and Law; Health Sciences; Computing, Engineering and Sciences; and Arts and Creative Technologies).

6.2. CENTRE OF ARCHAEOLOGY

Based in the University's £30 million Science Centre, the Centre of Archaeology undertakes world- class research and consultancy in a wide range of archaeological and forensic subjects – all supported by cutting-edge equipment and facilities. Always striving to enhance archaeological practice, the Centre of Archaeology is currently undertaking pioneering work in the discipline of Holocaust Archaeology and forensic approaches to buried remains. It is a Registered Organisation (RO) with the Chartered Institute for Archaeologists and its staff are committed to complying with the highest standards in archaeological field practice. Staff at the Centre also work within the Forensic and Crime Science department, which was one of the first universities in the UK to be accredited by The Chartered Society of Forensic Sciences (formerly the Forensic Science Society) for high academic quality.

6.3. DR CAROLINE STURDY COLLS

This research is led by the Centre's Research Lead, Dr Caroline Sturdy Colls, an Associate Professor in Forensic Archaeology and Genocide Investigation specialising in Holocaust studies. Dr Sturdy Colls' pioneering research focuses on the application of interdisciplinary approaches to the investigation of Holocaust landscapes. As part of this research, she has completed the first archaeological surveys of the former extermination camp at Treblinka (Poland), the sites pertaining to the slave labour programme in Alderney (the Channel Islands), the former Semlin Judenlager and Anhaltlager (Serbia) and killing sites in Adampol (Poland). Recently, she has also worked on a pilot project with the UK Holocaust Memorial Foundation (UKHMF) to map the terrain of Bergen-Belsen (Germany).

Dr Sturdy Colls is currently the Principal Investigator on three major research programmes focused on Holocaust and forensic archaeology. The first - *Recording Cultural Genocide and Killing Sites in Jewish Cemeteries* – is particularly relevant to the proposed research in Rohatyn since it aims to:

(1) Conduct new research into relationships between the destruction of property by the Nazis and their collaborators, and the use of religious spaces as killing sites.

(2) Undertake a series of "social action projects" at selected Jewish cemeteries where cultural and physical genocide occurred in the past, and where neglect and vandalism is occurring presently.

(3) Disseminate the results of (1) and (2) via a state-of-the-art digital platform.

The second project - *Accessing Campscapes: Inclusive Strategies for Using European Conflicted Heritage* - seeks to offer new insights to interpret, evaluate and present the cultural dynamics of former Holocaust- and Communist-era camps. This project will utilise many of the non-invasive recording methods outlined in the proposed programme of work in Rohatyn, which have already been developed as part of earlier research programmes at Holocaust camps across Europe (as described above).

The third project - *Digital Forensic Archaeology* - will develop and apply novel digital recording methods from archaeology and games technology to complex criminal investigations with a view to improving the ways in which evidence at crimes scenes is presented in Court.

Dr Sturdy Colls is committed to both research and professional practice, as demonstrated by her commitment to various professional organisations and via publications. She is a member of the UKHMF Education Advisory Group, appointed by the UK Government and a member of the Forensic Archaeology Expert Panel. She undertakes forensic search and recovery work with UK Police forces, and is also a Member of the Chartered Institute For Archaeologists (MCIFA), and a Member (MCSFS) and approved assessor for the Chartered Society of Forensic Sciences (CSFS) University Accreditation Scheme. Dr Sturdy Colls currently supervises four PhD students studying a wide range of archaeological subjects including new survey and remote sensing methods, community archaeology, and dissemination and visualization methods. She also teaches on a range of Masters and Undergraduate programmes, and regularly engages in public outreach activities in the UK and abroad. She has published extensively in Holocaust and forensic archaeology. Her most recent monographs include *Holocaust Archaeologies: New Approaches and Future Directions*, and the *Missing Persons Handbook* (due August 2016). Her research has received international media attention via television documentaries and radio programmes aired in Europe and the US.

From August-December 2016, Dr Sturdy Colls will be a Visiting Fellow at the Jack, Joseph and Morton Mandel Center for Advanced Holocaust Studies at the United States Holocaust Memorial Museum. She has also held visiting fellowships at Goldsmiths College, London (Forensic Architecture Project) and Netherlands Institute of Advanced Studies (Terrorscapes Project). She also acts as a Scientific Advisor for Kamp Westerbork, sits on the NWO Holocaust Archaeology Group and has been a Consultant for the Polish-German Reconciliation Foundation.

6.4. KEVIN COLLS

Kevin Colls is a professional archaeologist working for the Centre of Archaeology at Staffordshire University as the lead Archaeological Project Manager. Kevin has directed and published archaeological projects throughout the United Kingdom and Europe and holds over 15 years' experience in research and professional development-led archaeology. His specialist subjects include archaeological field techniques, urban archaeology and forensic archaeology.

Kevin's project portfolio includes major archaeological excavations in many of the UK's urban centres including London, Birmingham, Manchester and Bristol, archaeological survey and remote sensing on Scottish Islands, and rural archaeological surveys in central Greece. For the past eight years, Kevin has also worked closely with his wife (Dr Caroline Sturdy Colls) on a number of forensic research projects throughout Europe, including the aforementioned projects at Treblinka, Alderney and Staro Sajmiste. He is an active member of the *Recording Cultural Genocide and Killing Sites in Jewish Cemeteries* and *Accessing Campscapes: Inclusive Strategies for Using European Conflicted Heritage* projects, bringing his expertise in project management, archaeological field survey and the application of innovative non-invasive techniques to this research. He has also worked with numerous police forces as an external consultant associated with the search for buried human remains and is currently managing a diverse portfolio of major research and commercial projects.

Of his current projects, the highest profile is the prestigious 'Dig for Shakespeare' Project in Stratford upon Avon. This globally important project focuses upon the excavation of the final residence of William Shakespeare (called New Place) and the house in which the Bard passed away. This project, and his work on the Scottish Islands, have led to two high profile appearances on television programmes for the BBC (Digging for Britain BBC2, and BBC Alba in Scotland) and the site was the focus of an hour long Time Team special in 2012 (Channel 4). More recently, he has also been involved in an investigation of Shakespeare's Tomb using a wide range of advanced non-invasive survey methods and this research was the subject of a major Channel 4 documentary (Shakespeare's Tomb). Kevin would bring this unique expertise to the Rohatyn Jewish Heritage Project and would draw upon his experiences in applying state-of-the-art non-invasive methods to complex archaeological sites.

6.5. OTHER STAFF AND RELATED EXPERTISE

The project will also be supported by two archaeologists from the Centre of Archaeology. These archaeologists will assist with the desk-based assessment, field survey and post-processing stages of the

project. The first will be selected from existing field staff at the Centre of Archaeology based on their availability at the time when the proposed archaeological fieldwork takes place. These staff will be educated to postgraduate level as a minimum and will have previous experience of working at WWII-era sites. The second will be Miss Czelsie Weston. As part of an ongoing commitment to documenting Holocaust killing sites, Dr Caroline Sturdy Colls is currently supervising a PhD focused on mapping and disseminating information about sites of mass violence that exist outside of Nazi camps. This doctoral project, undertaken by Czelsie Weston, will explore several Jewish cemeteries in Poland along with a number of other potential mass execution sites. Czelsie's ongoing research into this field will make her an invaluable member of the project team.

7. PROJECT COSTING

Our proposal is to spend a total of 7 days in Rohatyn. A total of 3 days will be spent at each of the southern and northern mass grave sites. This leaves us with a 1 day contingency in the event that these surveys need to be extended or bad weather has an impact upon working hours. The project team will consist of a team of 4. The budget includes all travel and hotel costs, and all additional staff costs to complete the post-field reporting, data processing, and archival and historical research.

STAFF COSTS PLUS UNIVERSITY MANAGEMENT AND ADMINISTRATION:	**£12,492**
EQUIPMENT AND CONSUMABLES:	**£955**
TRAVEL COSTS:	**£3,270**
PROJECT TOTAL:	***£16,717***

Additional project requirements offered in-kind by Staffordshire University (not included in the above total): staff time for travel days, in-house equipment hire (EDM, GPR, Software, IT services): £4,130.

THE JEWISH CEMETERY

The third investigation site at the Jewish Cemetery is not included in this costing. Should you wish to complete an investigation at this location using the project methodology outlined in this document, then the costs for this would largely depend upon the timings of the work. If this survey can be undertaken at the end of the 7 days fieldwork, then the additional staff costs and accommodation would equate to **£2,100**. Miss Weston's time would be an in-kind contribution to the project should it be possible for her to utilise this as a PhD case study. If the survey takes place at a different time, then additional travel charges would apply to cover flights,

transfers, and car hire.

This tender is subject to the approval of the University Legal Office of the form of contract and its conditions.

Charges will be valid from date of quotation to 31st July 2017, after which time an inflation supplement may apply.

PAYMENT AND COMMISSIONING OF WORKS

On commission we will require a formal letter or purchase order from the company / organisation responsible for paying the invoice. The commission should clearly state the organisation's or individual's:

- Full name, address, telephone number;
- Invoice details (if different);
- Date of the quotation from Staffordshire University;
- Total cost of the work to which they are agreeing and provisional start date.

Figures:

Figure 1: The methodology for desk-based assessments that will be followed in Rohatyn (reproduced from from Sturdy Colls 2015: Table 5.1).

Footnotes:

1 Sturdy Colls, C. 2015. Holocaust Archaeologies: Approaches and New Directions. New York: Springer.

2 Sturdy Colls, C. 2015. Holocaust Archaeologies: Approaches and New Directions. New York: Springer.

3 Sturdy Colls, C. 2015. Holocaust Archaeologies: Approaches and New Directions. New York: Springer; Institute for Archaeologists. 2012. Standard and Guidance for Historic Environment Desk-Based Assessment. http://www.archaeologists.net/sites/default/fies/node-files/DBA2012.pdf

4 Sturdy Colls, C. 2015. Holocaust Archaeologies: Approaches and New Directions. New York: Springer.

5 Landscape change in rural environments often proves difficult to evaluate as changes such as the removal of trees, excavation works as part of land management etc may not always be documented. See Hunter, J., Simpson, B. and Sturdy Colls, C. 2013. Forensic Approaches to Buried Remains. London: John Wiley & Sons for further discussion of this topic.

6 Potekhina, I. (2012). The Routledge Handbook of Archaeological Human Remains and Legislation: An International Guide to Laws and Practice in the Excavation and Treatment of Archaeological Human Remains. London: Routledge.

7 Sturdy Colls, C. 2015. Holocaust Archaeologies: Approaches and Future Directions, New York: Springer.