

# FINAL REPORT

Season Two: October 2008 – April 2009

ARCE Groundwater Lowering Response Project, Luxor

“Field School for SCA Conservators”

Edward D. Johnson

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# ARCE Conservation Field School Component: Second Season, October 2008 – April 2009

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Edward D. Johnson,  
Assistant Director

The Conservation Field School, a part of the Luxor East Bank Groundwater Lowering Response Project, began the second round of teaching of conservation and related actual conservation work at the Temple of Khonsu, in the precinct of the Karnak Temple complex, in October, 2008.

## **The aims of the Conservation Field School include the following:**

- 1- To train SCA conservators in the field of Architectural Conservation in order to prepare them to establish and implement an ongoing program of long term monitoring and maintaining the temple structures and their fabric, to be accomplished primarily by means of classroom instruction, in combination with actual field conservation, as noted below;
- 2- To undertake actual conservation in and around the temples of Karnak and Luxor, concentrating on conservation at the Temples of Khonsu and Luxor and;
- 3- In conjunction with the training of conservation students, to teach the proper use of the conservation laboratory built and equipped for the conservation of the temples and objects found within them from time to time in the excavations now possible as a direct result of the lowering of the groundwater within the temples.

## **Preliminary Preparation**

Preliminary preparation of the program of conservation was begun early in 2007. The Director and Assistant Director of ARCE began to formulate the program, its components and contemplate filling staff positions. This was followed by a round table hosted by ARCE in Luxor in mid July, 2007, attended by senior ARCE staff, as well as an international team of conservators and conservation scientists who reviewed the program and offered constructive ideas and suggestions about its content. This was followed by continued communications among the group thereafter.

At the same time senior members of the SCA Conservation section were consulted about course content and their perceptions as to the needs of the conservators in the Luxor area, emphasizing the specific needs of Luxor and Karnak temples.

The second season of the Field School began when the Assistant Director, who handles the conservation portions of the overall project arrived in Luxor in September, 2008 and commenced planning and outlining the season's course of study, with input from senior SCA Conservation personnel. This included the specific areas of teaching, as well as arranging for outside experts in certain areas to come to Luxor to teach at the Field School. Whenever

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possible, preference was given to native Egyptian Arabic speaking instructors, to insure the best possible transmission of knowledge to the students. Where this was not possible, instructors with a background and experience working in Egypt were chosen and their presentations simultaneously translated into Arabic.

## Training Course Coverage and Components

### **Summary of Subjects Taught:**

A summary of areas in which the students received instruction included the following;

- 1-Introduction and review of most important technical terms encountered in the course in English;
- 2-Documentation of the monuments, including;
  - a-Creation of full and complete Condition Reports;
  - b-Archaeological photography of the monuments detailed in Condition Reports;
  - c-Damage mapping of monuments detailed in Condition Reports;
- 3-Conservation Charters and Conventions-Athens, Venice, etc.;
- 4-Ethics of Conservation-including levels of conservation, ethics of conservation, proper anastylosis;
- 5-Adhesives, Consolidants and Solvents- their proper choice and use in Egypt;
- 6-Geology of Egypt-emphasizing stones used in antiquity, their use and deterioration.
- 7-Stonecutting and Masonry-emphasizing ancient Egyptian building techniques and modern restoration, including quarrying, dressing and carving of stone, transportation and installation.
- 8-Groundwater, salts and the mechanisms of salt decay, including preventive conservation, hygroscopic salts, humidity and its effects on salts, types of stones susceptible to salt decay, mechanics of salt decay, control of salts, use and types of stone consolidants and their effects.
- 9-Consolidation of stone, emphasizing actual in the field stone consolidation using a variety of stone consolidants, e.g. silanes and ethyl silicates, e.g., Wacker OH-100, acrylics, etc, with laboratory demonstrations and work.
- 10-Conservation of small objects, including their proper cleaning, handling, packing and storage, condition reports for small objects, consolidants and adhesives appropriate for small objects and other conservation techniques for small objects.

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11-Total Stations-the use, role and function of Total Stations in archaeological /architectural conservation, including lecture, demonstrations and field application in and around Karnak temple.

12-Archaeological drafting and illustration, specifically the drawing of small finds, e.g., pottery, as well as drawing of scenes and inscriptions on the walls of the temple for use in damage mapping where no previously drawn epigraphic drawings were available.

During the 2007-2008 season it was discovered that the Field School students would benefit from greater exposure to general Egyptological training and teaching. As a result, a number of classes and lectures about Egyptology and the history of the Temples of Karnak and Luxor were presented to the students over the 2008-2009 season. The lecturers included Mr. Mansour Bouriak, Director of the Luxor area antiquities, Mr. Sultan Eid, Director of Luxor Temple, Dr. Gerry Scott, Director of ARCE and others.

In preliminary discussions with SCA conservation staff at Karnak and Luxor prior to commencement of the 2007-2008 season, it was determined that the present system of documentation of conservation work within the temples was inadequate and not undertaken on a regular basis. As the present program was designed to formulate, design and provide a proper response to changes brought about by the installation of the groundwater lowering systems at these temples, it was decided to institute a program to continuously document conditions at the temples in order to create a current base line of data as to their condition, and to have an idea of what changes were occurring in comparison to those conditions as time went on.

To that end, documentation of the temples was heavily emphasized, including the creation and writing of detailed condition reports, accompanied by photographs of current conditions noted therein, as well as learning to map actual damage separately from photographs. This emphasis on documentation was continued in the 2008-2009 season.

Documentation instruction was taught by ARCE conservation staff and supplemented by courses in archaeological photography and damage mapping, taught by outside staff with experience in Egypt, employing both classroom instruction and practical teaching in the field, as well.

In addition, students were introduced to the most important and influential conservation charters and conventions, such as the Athens Charter, the Venice Charter and others. This was followed up with instruction in the ethics of conservation, covering such topics as levels of conservation, ethics of documentation, proper anastylosis and the like.

Subsequently, the students received training in the use of adhesives, consolidants and solvents used with them, including health and safety considerations, both in the classroom and by way of practical demonstrations in which the students actively participated. The studies stressed the choice of adhesives, consolidants and solvents best suited to use in Egypt

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and their relevant properties, as well as their interaction with various materials to which they might be applied.

This was followed by instruction in geology, emphasizing the composition, characteristics and deterioration of the stone used by the ancient builders in and around the temples. Thereafter students received instruction in the related area of stonecutting and masonry, emphasizing ancient Egyptian building techniques and modern restoration, including quarrying, dressing and carving of stone, transportation and installation.

In early 2009, the students were instructed in the subject of groundwater, salts and the mechanisms of salt decay and related areas, as mentioned above. This was followed up with more teaching on consolidation of stone, emphasizing actual in the field stone consolidation using a variety of stone consolidants.

Students also received instruction in conservation of small objects which were excavated during construction of the groundwater lowering system.

In March, 2009, the students were schooled in the use, role and function of Total Stations in archaeological /architectural conservation and monitoring.

Finally, in late March and early April, students received instruction in archaeological drawing and drafting, so as to be better able to document the condition of small finds, as well as to learn to draw scenes and inscriptions on the walls of the temple, so as to be able to prepare these for use in damage mapping of these areas.

At the conclusion of the program in April, 2009, 24 students were graduated from the program, bringing the total number of trained students over both seasons of the Field School to 48. Thanks must go to Mr. Saied Hamed, the assistant to the Assistant Director and Mrs. Amal Ali Mohammed, who's help with the organization of the training, translation and administration of the Field School was invaluable.

### Conservation in Khonsu Temple

Conservation efforts by teams other than the students in stone cutting and stone replacement, as well as in wall paintings conservation and restoration, were undertaken in several different areas of the temple. These are the subject of separate Final Reports.

Other work- Other work at the temple included epigraphic work by the Chicago House's team of artists and epigraphers. This will be the subject of a separate report by Chicago House to the SCA.

### Student Work-

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Documentation - Documentation continued in the form of written condition reports, photography and damage mapping, as described above, during exercises given the students at various parts of the temple. These corresponded either to specific plate numbers contained in the Chicago House publications on the temple, or, where these were lacking, to other designated areas identified in accordance with the descriptive scheme embodied in those publications.

The east interior wall of the entrance pylon to the temple was scaffolded from floor to ceiling and this was the primary area of work for the students. Before work began, while there was some color visible on the wall, this was badly obscured by thick layers of dust, dirt, soot, bird and bat droppings and other stains. Some areas, such as the architraves on the east side of the temple were completely black, with no visible traces of color.

The decorated surfaces were initially cleaned mechanically, with sort brushes and sponges, to remove surface dirt, including dust, bird and bat droppings. Once these techniques were carried out, the surfaces were washed with distilled water and alcohol. This greatly improved the appearance of some areas, but was not enough to clean the areas stained by soot, especially on the architraves. These areas were then poulticed with a solution of ammonium carbonate and EDTA, sometimes several times, which very effectively removed thick layers of soot, grease and other related dirt, revealing beautiful painted surfaces beneath. Residual stains on white ground were treated locally with dilute hydrogen peroxide, which effectively stripped away other layers of dirt. The net effect is that the painted surfaces, barely visible before, have sprung to new life, with colors and details now showing which had never been possible to see before. The cavetto cornice and torus molding above the main gate area, is especially attractive and much brighter than before.

In areas where the plastered surface was undercut and not supported, from either above or below, these areas were filled with mortar to provide support and stability.

While cleaning was being undertaken, all areas in the wall where there were gaps between the blocks, or ledges on the wall due to uneven placement of the blocks, where birds could nest or perch, were filled with mortar, in order to deny the birds any place to nest or roost and resoil the walls. These grouted areas were color matched and textured to blend into the appearance of the original structure when seen from a distance, but could be distinguished close up as modern work.

In addition, a portion of the east wall of the court, from the south east corner to the panel on the Second Pylon at Karnak, which was the extant entrance at the time the temple was first built by Ramses III, was also scaffolded, cleaned, and filled.

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### **Bab El Amara/Euergetes Gate**

As stated in the application and permission for the 2008-2009 season, desalination of the lower inside east side of this gate was undertaken as a preliminary step to further cleaning and conservation planned for the 2009-2010 season.

### **Work at Luxor Temple**

Conservation work at Luxor temple began in the courtyard of Ramses II, where the columns on the west side of the court have begun treatment. This involved removal of old concrete filling and its replacement with new lime mortar, along with desalination of the lower two meters of each column. This work provided the opportunity for at least one column to be structurally reinforced to strengthen it. This work will continue through June, 2009. This is being carried out by last season's graduates of the Field School, under the direction of Mr. Abdul Nasser, head of conservation at the temple.

Thanks go to the members of the SCA who made this season's instruction and work possible, including, but not limited to, Dr Zahi Hawass, Mr. Sabry Abdul Aziz, Mr. Mansour Bouriak, Mr. Ibrahim Soliman, Mr. Sultan Eid, Mr. Hamdy Abdul Galeel, Ms. Afaf Fathalla, Mr. Abdul Nasser, Mr. Mohammed Hussein, Mr. Mohammed Hattem and all the others who contributed to the success of the season.

Brief course reports are included on the following pages.

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Egyptology Component  
September 25, 2009 - October 3, 2009

Instructor: Mohamed Shata

This report describes the Egyptology component of the ARCE Conservation Field School at Luxor, Egypt was taught and completed between September 25, 2009 through October 3, 2009.

The participants were 28 in number, consisting of SCA employed conservators and conservation technicians from the Luxor area, employed in and around the temples of Karnak and Luxor. Their education background ranged from High School to University training. Few seemed to have had any Egyptological training or knowledge.

## **The main points covered during the instruction may be summarized as follows:**

### **1-Introduction to the history of ancient Egypt:**

This included the main historical epochs of ancient Egypt, the Old, Middle and New Kingdoms, as well as the Late Period.

### **2-Introduction to the monuments of Upper Egypt:**

Emphasizing those of the New Kingdom and later located in and around the region of Luxor, both on the East and West Banks.

### **3-Providing a detailed history:**

Detailed history of the political, artistic and architectural aspects of the 18<sup>th</sup>, 19<sup>th</sup> and 21<sup>st</sup> Dynasties, the Late Period and their monuments in and around Luxor.

### **4-Explaining characteristics of gods:**

Explaining the cults of the various gods of ancient Egypt to whom the various temples of the Luxor region were dedicated, emphasizing those of Amun/Amun Re, Mut and Khonsu at Karnak and Luxor temples and the related Festival of Opet; religious iconography utilized in the artistic decorative schemes of these temples.

### **5-Explanation of materials and techniques:**

A brief explanation of the primary materials and techniques used in the construction of the monuments, including sandstone from the quarries of Gebel Silsila, granite from Aswan, etc.

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## **Teaching methodology**

The course consisted of lectures in the classroom, for which purpose the teaching area, facilities and equipment in the conservation laboratory at Karnak was used, as well as lectures in and around the area of the temple of Karnak, including the main axis of the temple of Amun, the temple of Khonsu and others. Classroom lectures were presented by way of Power Point presentations, or with the use of notes and illustrations/diagrams on the laboratory white board. For the lectures in the field, I walked the class through areas of the temples to be reviewed and discussed, “tour guide” fashion, giving explanations and answering questions as we went through the buildings. The outside lectures were done the first part of the AM class session, as the weather in September was still quite warm and I wished to keep the students from experiencing heat exhaustion.

## **Assessment of Individual Student Performance**

Assessment of the students was done by way of a written examination, in Arabic. The test consisted of written questions requiring simple, one word answers which were to be written in by the students. The students were monitored by Amal Saied, whose assistance throughout the course in handling attendance, setting up the Power Point projector, computer and the like was very helpful.

The names of the students and their grade on the examination is set forth below:

- 1- Hassan Yousef Abu Al Hagag - 65%
- 2- Ali Yousef Sedyeek - 80%
- 3- Samah Mohamed Abdul Raddi – 55%
- 4- Jouzeaf Hafz Aleon – 75%
- 5- Easha Abdul Kaddi Mahmoud – 95%
- 6- Ashraf Shams El Dien Mohamed – 65%
- 7-Bataa Mohamed Mahmoud – 80%
- 8-Magda Kamel Awaad – 60%
- 9- Noora Sayed Tawfik – 60%
- 10- Soheir AhmedMohamed – 85%

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- 11-Mohamed Al Azab Ahmed – 95%
- 12- Maryem Beshara Foaad – 85%
- 13- Mohamed Ahmed Awadd – 60%
- 14- Entesar Abdul Sapoor Moasa – 90%
- 15-Amira Yousef Abu Al Hagag – 60%
- 16-Eid Ahmed Galal – 60%
- 17- Ramez Fathy Abo Zyeed – 85%
- 18- Mostafa Abdel Monem Abdul Rasheed – 90%
- 19- Omran Mahmoud Fakar – 75%
- 20- Afaf Wadea Attia – 65%
- 21- Ahmed Gad – 90%
- 22- Kawser Sayed Mahmoud – 75%
- 23- Bkraya Mahmoud – 75%
- 24- Amal Ali Abdu Alla - Absent
- 25- Atyat Abdo Mohamed - 85%
- 26- Ali Al Tayeb - 95%
- 27- Emad Abdel Azez Ahmed – 90%
- 28- Takik Mohamed – 25%

The original tests and the grade sheet are attached as Exhibit 1

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### **Student Handouts and Outlines**

No handouts or outlines were employed, as the lectures were presented mostly with Power Point presentations. The students had all been provided with notebooks and pens at the beginning of the Field School the previous week and were encouraged to take their own notes as a way of positive reinforcement.

### **Recommendations for Program Development**

As so few of the students have had any real instruction in Egyptology, some having never had any at all, it would be beneficial if the time devoted to this component could be expanded to include a second week. This would provide a better chance to teach the students more material that would be applicable to the monuments in the Luxor area, their history and make up.

Students would benefit from having Arabic reading materials detailing the history of Ancient Egypt, such as portions of the Encyclopedia of the History of Egypt, by Selim Hassan. They could then also be given homework assignments to do at home.

More time would also allow more field trips to local monuments on both the East and West Bank, such as Luxor Temple, Medinat Habu and others, which would be of great value to the students.

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“Object Illustration and Wall Drawing”

Instructor: Marcia Gaylor

This report describes the Object Illustration and Wall Drawing component of the ARCE Conservation Field School at Luxor, Egypt. This program was taught and completed between March 23, 2009 and April 8, 2009 training 24 Egyptian students.

This component was two fold, the first designed to teach protocol and procedure to prepare technical illustrations of small objects for inclusion in condition reports, and publication in professional conservation and archaeology journals and reports, and second familiarize the students with the techniques and procedures of wall drawing so that they could produce a base map for damage mapping in the event that there was not a Chicago House epigraphic map available. Neither of these tasks had ever been undertaken by the students, and the course gave them actual experience in successfully completing illustrations and maps under supervision.

## **Technical Illustration of Small Objects.**

The course began with a Power Point outline of the entire illustration process. Major steps in preparing illustrations were covered and demonstrated; examination of the object, which surface(s) to feature, which surfaces are most explanatory, how to plan illustration and number of relevant views.

Students were trained to plot outline points on grid paper with a triangle (90 degrees) and to check measurements with calipers. This initial drawing in pencil included the use of object and pottery protocol of front, side, top and bottom if required, and any art, paint or carvings that may have been visible. The students were then trained in the inking protocol using three different widths of ink pens and velum tracing paper. Where appropriate they learned stippling and related conventions for final publication, including the preparation of protocol legends to ID and scale the object for final publishable drawing. The Karnak Laboratory tables were used for this work.

### Equipment

Drawing Board  
Mechanical Pencil & refills  
Blue (non-photo) pencil  
Eraser  
90 degree Triangle with mm ruler  
Degrees Circle  
Caliper  
Glue Stick  
French Curves – Set of 3 with raised edges  
Permanent Ink – 3 width

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Wide – Outline only  
Medium – Interior major lines  
Thin – Interior shape indication  
White out  
Graph Paper  
Velum Tracing paper  
Knife for cutting paper  
Zip bags for Tools, Papers and Sample Drawings  
Metric Steel Rulers from Damage Mapping Kit  
Metric Measuring tape from Damage Mapping Kit

### **Teaching methodology**

After the power point lecture, the next day each student was given a small object or pot and a full day to prepare a pencil drawing of the object. The steps included:

1. Establishing the purpose of the drawing (Technical Publication, Archaeological Record, or Conservation Condition Report and Plan.)
2. Examine object to observe which surface to feature, and which surfaces are explanatory of shape.
3. Plan the drawing and number of relevant views and fit them on the page.
4. Plot outline points of first view on mm grid paper
5. Check measurements with caliper, triangle, and Protractor and adjust
6. Prepare the number of relevant views using steps 2 through 6 as needed to show object features
7. Draw the connecting lines to show how the views relate to each other.
8. On tracing paper placed over the pencil drawing ink the outside line, interior lines, stippling.
9. Prepare and cut out Protocol Legend to identify object and attach to drawing with glue
10. Photocopy assembled components

This power point lecture was all day and Saied Hamed provided translation, explanation and fielded questions from the students, which was essential to the learning process. Saied's teaching assistant Amal provided further explanation in Arabic at every step of the methodology, and followed through with each student at the checking points. Amal also assisted with the collation and orderly distribution of materials.

### **Drawing Epigraphic Maps for use in Damage Mapping**

The second part of the training included constructing a string-held-with-putty grid, 2 meter x 1 meter, section of a wall. Two students were assigned to each 2 x 1 section. Both students were taught how to measure from the strings to locate carving radiuses and hieroglyphs. They were taught how to reduce the measurements in a 1 to 10 ratio to graph paper, and make the appropriate number of measurements depending on the curve of the carvings in order to get an accurate line depiction of the decorated surface.

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Tools:

Lightweight String

Putty stickers that do not damage the wall-Pritt Putty

Metric Tape measure

### **Teaching methodology**

After a lecture given in front of the walls, each pair of students was given a 2 meter tall by 1 meter wide section of a carved wall in the Kohnsu temple. It took 2 or 3 days to complete measurements and pencil recording of each 2 meter area before the students inked their drawings. The steps included:

1. Brushing off the areas where Pritt multi tack putty would hold the strings to the wall.
2. Blocking each 2 meter high by 1 meter wide with string and Pritt putty.
3. Training the students to identify the areas to measure first (traditionally the largest carved forms).
4. Plan the drawing by identifying a 2 meter high by 1 meter wide area on their graph paper using a 1 to 10 ratio, 1 centimeter = 10 millimeter
5. Plot outline points of the mortar or joints on mm grid paper using a two point measurement from the vertical and horizontal meter strings using a measuring tape. One student was to measure while the other would record the points. Then the students would switch, so each learned the experience of both tasks. Teaching assistants would check measurements and make any adjustments necessary.
6. Once the blocks had been defined the students proceeded to measure and draw the largest forms included in the decorated surface area. Teacher assistants would again check measurements and make any adjustments necessary.
7. On tracing paper placed over the pencil drawing ink the decoration's interior lines were drawn in ink. The major forms were drawn with a .5 pen and the hieroglyphs and other lesser lines were drawn with a .1 pen. Each student drew a final inking of the 2 meter area that they measured together.
8. The next to final phase is to match up the edges of each 2 meter drawing to show the continuous wall decoration.
9. The final phase is to provide a composite photocopy map to the students showing them how they could work as a team to produce a map which is usable for damage mapping.

For this lecture Saied Hamed provided translation, explanation and fielded questions from the students, which was essential to the learning process. Saied's teaching assistant Amal provided further explanation and reinforcement of the lecture points in Arabic as she checked with each student to see their work.

The original power point presentation (See Exhibit B- English) is being translated and a hard copy of the translated version will be given to each student in next year's program.

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### Assessment of Individual Student Performance

The one-on-one review of a student's work was essential to clarify the conventions that were not fully understood, as evidenced by the measurements, pencil drawings and ink application.

The evaluation of each student includes an assessment of their Understanding, Skill Level and Motivation, as all of these factors are needed for quality archaeological illustrations of small objects, and for the preparation of maps for damage mapping when the Chicago House epigraphic drawings are not available..

Understanding is the ability to implement the various protocols for measuring and recording small objects and epigraphic maps. This will be rated Excellent, Very Good, and Average.

Skill level is a function of neatness, consistency of application of the measurements, pencil marks, and final inking and legend to show provenance and illustrator information. The students produced two ink drawings, which was their first attempt. Therefore the standard is the curve on this rating, as opposed to the standards for publication. This will be rated Excellent, Very Good and Average.

Motivation is assessed as diligence in getting the work done, and the interest in doing it correctly according to procedures that were taught. This will be rated Excellent, Very Good and Average.

Point System: 3 points for each of the above 3 categories could be attained, for a perfect score of 9, or an average score of 3.

#### **1-Afaf Abdel Fattah (Technician Abu Elgoud Storage Magazine) --9**

Understanding: Afaf's understanding of concepts and how to implement them is **Excellent**.

Skill: Her skill level is (**Excellent**)

Motivation: Her motivation is (**Excellent**) as she earnestly wants to do a good job.

#### **2-Amany Sayed (Technician Luxor Temple) -- 7**

Understanding: Amany required some repetition of the concepts and eventually acquired an understanding. (**Very Good**)

Skill: She was **above average** in application of the concepts, however needs more inking practice. (**Very Good**)

Motivation: Her motivation is high and she wanted to learn. (**Excellent**)

#### **3-Ashraf Fathy (Technician Luxor Museum) --5**

Understanding: Ashraf understood the procedures for small object drawing and epigraphic recording (**Very Good**).

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Skill: His application of the procedure was aggressive and he wanted to finish quickly which was not the goal (**Very Good**).

Motivation: He was not motivated to make corrections to his original work and left before making corrections (**Average**)

### **4-Awaad Mohamed Awaad (Technician Al Gournia) --5**

Understanding: Awaad redrew his object drawing a few times to get the measurements right and eventually prepared a good drawing. (Very Good)

Skill: His skills in application of the inking were good. (Very Good).

Motivation: His motivation was average. (**Average**).

### **5-Fatma Khaery Mohamed (Technician Al Gournia)--8**

Understanding: Fatma did an excellent job on the object drawing. She had trouble grasping all of the concepts on the wall map, and diligently worked on them with help from me and Amal and she understands the concepts now. (**Excellent**)

Skill: She prepared her object drawing and wall map well (**Very Good**)

Motivation: Fatma is very intent on getting the job done right and seeks out answers whenever she is in doubt. Her motivation is (**Excellent**)

### **6-Fatma Mahsoub Sultan (Technician Al Gournia) -- 6**

Understanding: Fatma grasped the object drawing concepts after working with her. (**Very Good**).

Skill: Her skill level is (**Very Good**)

Motivation: She was motivated to do a good job. (**Very Good**)

### **7-Hamdy Amin Ismael (Technician Karnak Temple) -- 7**

Understanding: Hamdy's understanding of the conventions was (**Excellent**).

Skill: Hamdy's skill was very good. He had two difficult assignments and needs work on his inking neatness. (**Very Good**)

Motivation: He sat in the shade while his female partner took the measurements, and he recorded them. He performed the inking work but was quick to finish it. (**Very Good**)

### **8-Hassan Moultm Hussien (Technician Al Gournia) -- 7**

Understanding: Hassan's understanding of the drawing concepts is (**Very Good**).

Skill: His application of the inking is neat, but he missed one convention of stippling. (**Very Good**).

Motivation: His motivation is very good and did well working with others. (**Excellent**) .

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### **9-Heba Hussien Ahmed (Technician Luxor Temple) -- 3**

Understanding: Heba's chose the most difficult piece to draw which included paint, and therefore needed continuous help to complete the drawing. I'm not sure if she could do any drawing on her own as she was not fully engaged in the process. **(Average)**.

Skill: Her skill level was sloppy when she did her part of the inking task. **(Average)**

Motivation: Her motivation is to get others to do as much for her as possible. **(Average)**

### **10-Hoaida Hussin Mattar(Technician Conservation of Luxor antiquities) -- 8**

Understanding: Hoaida's understanding of the concepts exhibited some confusion in the Object Drawing and wall drawing but she eventually understood and completed the tasks. **(Very Good)**.

Skill: Her skill level needs practice in shape definition, however she presents a neat and definitive communication. **(Excellent)**.

Motivation: Her motivation is **(Excellent)**.

### **11-Loaes Saad Barsy (Technician Mummification Museum) -- 8**

Understanding: Loaes's understanding of the protocol for object and wall drawing was very good. **(Very Good)**.

Skill: Her skill level needs improvement in shape definition, however she presents a neat and definitive communication.**(Excellent)**.

Motivation: Her motivation is **(Excellent)**.

### **12-Mohamed Ali Abdullah (Technician Al Gournah) -- 6**

Understanding: Mohamed Ali has a good understanding of object drawing and wall drawing protocol. **(Very Good)**

Skill: His skill level of application needed guidance but ultimately was more exact.**(Very Good)**

Motivation: His motivation is **(Very Good)**.

### **13-Mohamed Mohamed Ibrahim (Technician Al Gournah) --6**

Understanding: Mohamed Mohamed's understanding of the protocol for object and wall drawing was **(Very Good)**.

Skill: His skill at application of the inking is **(Very Good)**

Motivation: He is a very light hearted and has a good attitude.**(Very Good)**

### **14-Mona Mahmoud Nubi (Technician Conservation of Luxor Antiquities) -- 9**

Understanding: Mona's understanding of the drawing protocol for object and wall drawings was **(Excellent)**.

Skill: Her skill level is **(Excellent)**.

Motivation: She is motivated to do well and has a good work ethic **(Excellent)**.

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### **15-Moustafa Alaa Eldin (Technician Conservation of Luxor Antiquities) -- 9**

Understanding: Moustafa has excellent understanding of drawing protocol (**Excellent**)

Skill: His skill level is excellent, but needs practice as do all the students (**Excellent**).

Motivation: He is motivated to do a good job and worked as a team with Othman as they both had bowls to draw that needed extra hands to hold it in place. (**Excellent**)

### **16-Othman Ali Abdullah (Technician Al Gournah) --8**

Understanding: Othman had a difficult time with the protocol for pottery/bowls. After several times of placing the bowl against a block, we worked with Othman and Moustafa and they did their bowls together. Othman now has excellent understanding of small object drawing.(**Excellent**)

Skill: His accuracy of implementing the protocol was very good. (**Very Good**)

Motivation: Othman is highly motivated to do these artistic projects as he had never been able to do anything that included drawing before. (**Excellent**)

### **17-Omayma Mohamed Roshdy (Technician Luxor Temple) -- 8**

Understanding: Initially Omayma passively allowed her partner to take over, and did not understand what he was doing. We gave her a separate area that she handled with Heba (who soon left to go to the administration offices), so effectively she completed the project alone. (**Excellent**)

Skill: Her skill level of application is (**Very Good**)

Motivation: Her motivation turned around as soon as the project no longer had a difficult partner and she spent extra time to make sure she finished the whole project. (**Excellent**)

### **18-Qenawya Ahmed Essa (Technician Abu Elgoud Storage Magazine) -- 9**

Understanding: Qenaweya's understanding of drawing protocol was (Excellent)

Skill: She was very slow to plot the measurements because of her standards of precision, but after a while she understood some areas could have the dots spaced out more.(**Excellent**)

Motivation: Her motivation was very good and is earnest in her studies (**Excellent**).

### **19-Raaous Awadd (Technician Luxor Temple) -- 7**

Understanding: Raaous has a very good understanding of the concepts (**Very Good**)

Skill: Her skill level is above average. (**Very Good**)

Motivation: She demonstrated a willingness to learn.(**Excellent**)

### **20-Safaa Badawy Hassan (Technician Al Gournah) -- 8**

Understanding: Safaa's understanding is excellent and she frequently asks questions.(**Excellent**)

Skill: Her skill level is very good, but she hurried through the inking (**Very Good**)

Motivation: Her motivation is high. (**Excellent**)

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### **21-Salwa Nour Elding (Technician Conservation of Luxor) -- 7**

Understanding: Salwa's understanding is very good and she learned quickly. (**Excellent**)

Skill: Her application was average, she could use additional training. (**Average**)

Motivation: Her motivation was very good and is earnest in her studies (**Excellent**).

### **22-Sayed Ahmed Ibrahim (Conservator Naga Hammadi) -- 9**

Understanding: Sayed quickly understood the drawing protocols and he had paint on one of his objects (**Excellent**)

Skill: He implemented his understanding and made corrections where needed. (**Excellent**)

Motivation: Sayed has high motivation and some leadership capabilities. (**Excellent**)

### **23-Yasser Farag Qenawy (Technician Karnak Temple) -- 7**

Understanding: Yasser's understanding of damage mapping concepts was (**Excellent**)

Skill: His skill level very good, but as many students do, he needs more experience in inking. (**Very Good**)

Motivation: Yasser appeared to be motivated (**Very Good**)

### **24- Zaynab Ahmed Moosa (Technician Luxor Temple) -- 8**

Understanding: Zaynab's understanding of the protocol for object and wall drawing was (**Excellent**).

Skill: Her inking style was not as neat as it could be and she needs some improvement. (**Very Good**).

Motivation: Zaynab was very interested in doing a good job. (**Excellent**)

### **25. Zeinab Mohsen ( ? ) 5**

Understanding: Zeinab's understanding is good and she was very patient as she needed special bowl instructions. (**Very Good**)

Skill: Her application was good, she could use additional training in inking. (**Very Good**)

Motivation: Her motivation was unclear as she was not present for a couple of key days of training and implementing (**Average**).

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### **Student Handouts and Outlines**

Copies of all outlines, handouts and other pertinent material given to the students during the teaching of this component are attached to this Final Report and hereby incorporated by reference as Exhibits A (materials), and B (Power Point Presentation), and C (Sample illustrations).

### **Recommendations for Program Development**

For next year it would be ideal to have last year's power point presentation translated so that the students could see in written form the instructions, as well as hear the lesson from the translator.

Also, a power point presentation needs to be made for the wall drawing section of the course. This portion of the course should be completed first, as in late March it is not as warm as in the middle of April.

Before next year's class graduates in April they should be given a translated version of the translated power point presentation showing both parts of the course.

The students need additional time for a second small object drawing which would be more of a test than a coaching procedure, to verify their full understanding. Therefore the course could be a one month course in stead of a two week course

Some students have asked to be taught to do lithic drawings, and this suggestion will have to be evaluated by the director and his assistants.

A list of drawing protocol and tools and explanations in English and Arabic should also be provided to the students at the beginning of the course.