

SCENOGRAPHY OF *MK-WOYZECK*

by

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ABSTRACT

This paper describes and discusses the lighting, video, and scenery design of *MK Woyzeck*, presented at the Frederic Wood Theatre from October 1st to 10th 2009. The design will be presented primarily through a series of photographs taken by various photographers at several points during the design, cueing, and performance phases of the production. Emphasis will be placed on the use of digital projectors to provide full illumination of the actors, referred to as Digital Video Illumination (DVI), as well as the role of the projection/set/lighting designer as an active deviser within the rehearsal process. Chapter 1 will provide a brief overview of the production concept for the piece and its impact on design strategies. Chapter 2 illustrates the overall execution of the design through a collection of photographs with accompanying captions describing the intention behind each of the cues depicted. In a similar fashion, Chapter 3 describes some of the advantages and challenges inherent within the DVI system and the particular projection instruments employed in this production. Chapter 4 is devoted to the actual mechanics of DVI cue construction. These are illustrated through the description of five sample cues representative of the major ways in which DVI was applied to this production. Chapter 5 summarizes the outcomes of this experimental design process through a brief conclusion.

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Chapter 1- Conceptual Overview

The design of *MK Woyzeck* was created using digital projectors to display video and pictorial content on the set as well as providing the sole method of lighting the actors on the stage. This decision was motivated by several dramaturgical and technical factors.

An original devised performance piece, *MK Woyzeck* was a collage drawn from four main sources: Georg Büchner's 19th century drama, *Woyzeck*, the extant historical records of the actual murder case upon which Büchner's play was based, documents from the clemency petition of a Vietnam veteran on death row, and documentary sources concerning the notorious Holmesburg Prison experiments of the 1960's and 70's. The combination of these sources was conceptually framed as the result of a scientific experiment in "historical blending" carried out by the actors. The show needed to move back and forth quickly between a number of different time periods and contexts and the actors needed to be able to slip in and out of a number of different characters just as quickly. The devised nature of the piece also meant that the rehearsal process was not started with a fixed text and that almost any element of the piece could be substantially changed at any point in the process. All of these considerations played a role in the selection of DVI as the central design strategy for this piece.

Most importantly, the ability to immerse the actors within uniquely constructed and continually morphing projected visual environments was central to the show because it allowed for the actual visual representation of the experiments in "historical blending" carried out by the actors/scientists. Secondly, the ability to project video and pictorial content onto the set was used to contextualize and enhance action and text that was often rapidly shifting between various historical periods and contexts. Thirdly, the use of digital projectors allowed for the projection of costumes onto the white lab-coats of the actor/scientists in order to establish and distinguish the various characters that each represented in rapid succession. Finally, the lamps of the digital projectors emitted a very pure, sterile, white light that, in conjunction with the set design that, through its colour palette and visible inclusion of technical equipment and operators, suggested a laboratory. These design decisions aided in the creation of a scientific, experimental environment within which the show was performed. Because the set, lighting, and projections were all created by a single designer, it was possible to ensure that all design elements would reinforce one another effectively. Specifically, the set was designed primarily as a projection surface, with a large curved screen and a raised floor platform that were painted specifically to

maximize their effective use as projection screens.

The other major consideration that made DVI design an effective design choice for this piece was the need for the designer to play a role as an active deviser. By using DVI, it was possible to make changes very quickly to the projected pictorial and video content, which made it possible to experiment rapidly with various immersive environments. Also, because most the projected content was adapted from previously found media, it was possible for the designer to create and adapt content during the rehearsal and devising process. As the acquisition and adaptation of media is a very time consuming process, it was very useful to be able to perform this task during devising in order to ensure that the most appropriate material was found and so that its viability could immediately be tested. In this way, the design and the devising/rehearsal processes moved forward together as opposed to the more traditional North American theatre model of the lighting/projection designer becoming fully involved in the process once the show has already been blocked or devised. Also, because all rehearsals and devising took place on the stage where the final performance took place, it was fairly easy to hang and roughly focus the projectors before the rehearsal process began. In this way, it was possible to be working with the projectors and their content through the entire devising process, which allowed the devising and the design to directly inform and affect each other.

Chaper 2- Execution

2.1: General Execution

Figure 1: Raised Platform as Immersive Environment



The raised platform and wall were the main projection surfaces and most scenes occurred in this area. By unifying the content in that three dimensional space, it was possible to create immersive environments that set the scenes in time and place as well as adding emotive and thematic content.

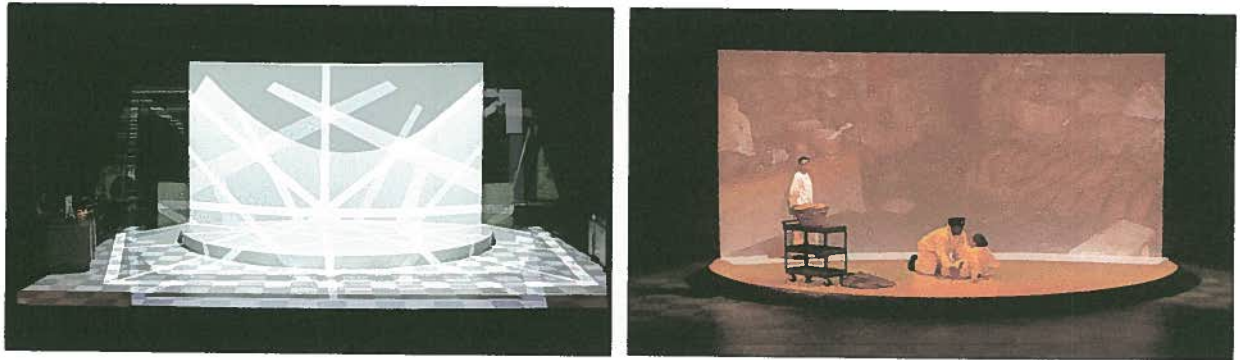
Figure 2: Testimonial Boxes



A significant portion of the text in the show was court testimony. In order to highlight the text

that was direct testimony, almost all of it was spoken while actors were standing in pure, white boxes to remove some of the theatricality from the real life testimony.

Figure 3: Relationship with Set Design



As the set for the show was essentially a blank canvas to be filled with projections, it was very easy to transform it into a variety of different immersive environments through pictorial/video content.

Figure 4: Flexibility of Content



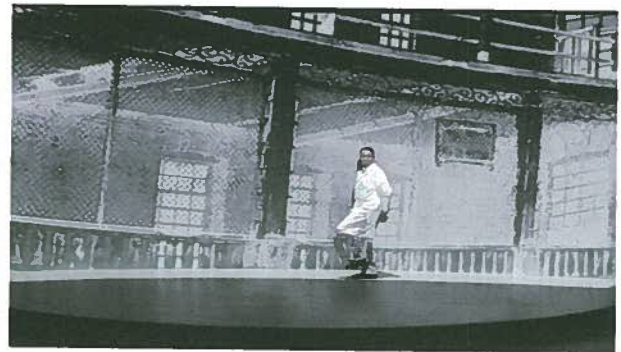
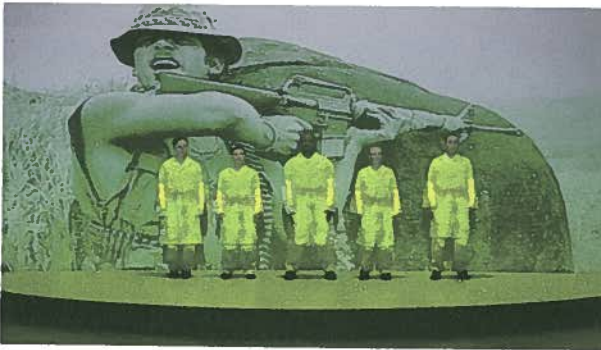
These images display two consecutive cues in which the change in the background environment mirrored a change in the character of the standing actor. Because the change in character involved a substantial shift in time, the ability to display the change visually was useful in locating the show in time and space.

Figure 5: Immersive Environments



Because the actors were lit solely with digital images, their faces and bodies would be lit differently depending on where they stood within the image. This allowed them to be more fully present within the digital environment of the projection than they would be if stage lights were highlighting them and “pulling them out” of the backdrop image.

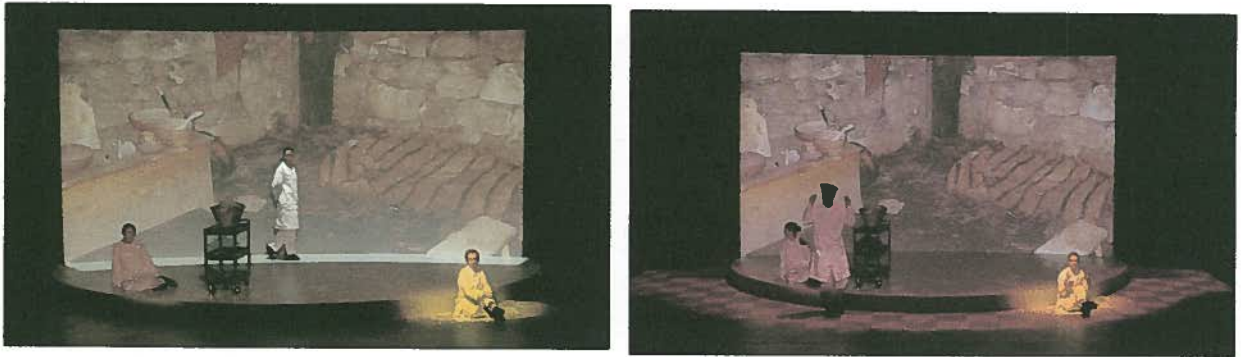
Figure 6: Scenes in Different Times/Places



The use of digital content allowed for scenes to be placed specifically in time and place, such as the recognizable Vietnam photo on the left. Or, in an ambiguous time/place, such as the generic institution photo on the right.

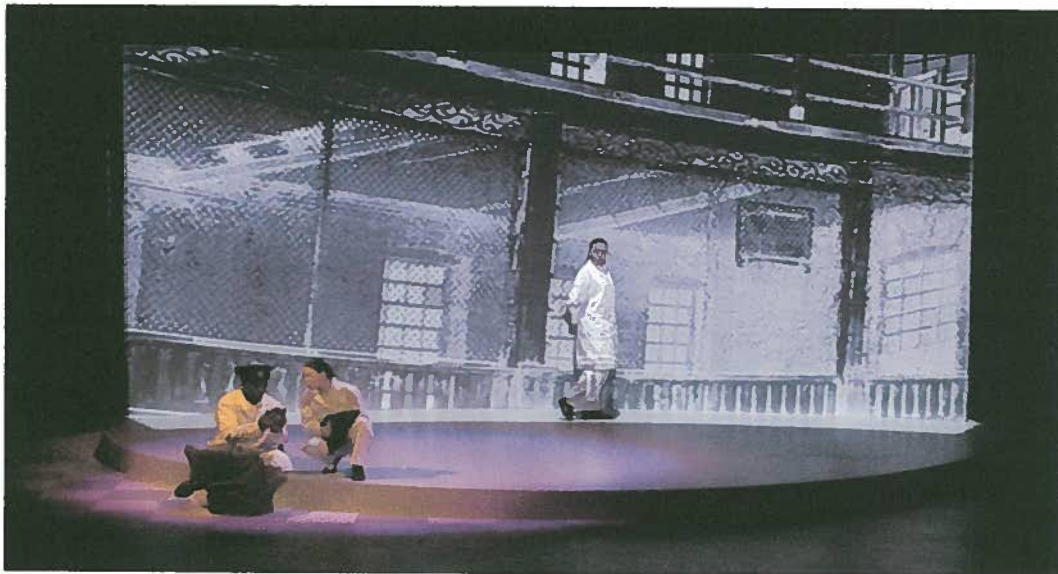
2.2: Specific Execution

Figure 7: Tracks on Floor



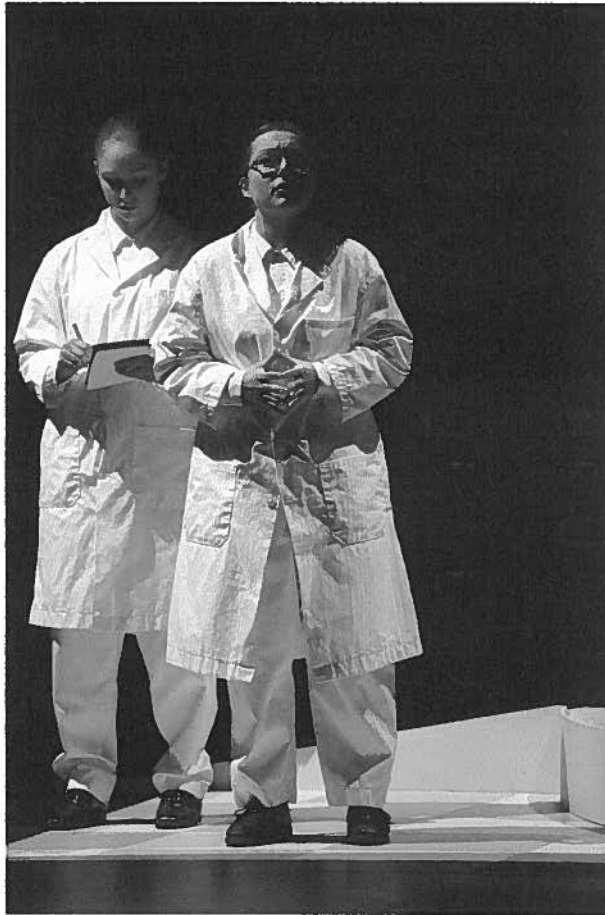
In order to define various acting and, more conceptually, thematic areas on the stage, the top projector could be used to create tracks on the floor for characters to follow around the stage.

Figure 8: Use of Traditional Lighting Design Theory



Whenever possible, the projectors were used as traditional lighting instruments typically are in terms of trying to light with contrasting colours from opposing high angles. Within this cue, warm and cool circles are being projected from projectors positioned at opposing angles.

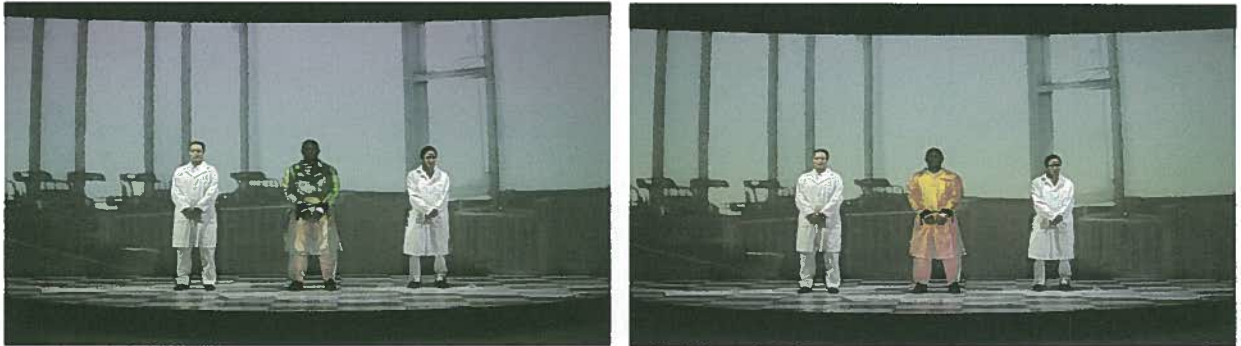
Figure 9: High Angles



The use of projectors as lighting instruments can be limited if they are used just from the front and top, which prevents them from sculpturally lighting the actors as in a traditional lighting design. By using two projectors from high side positions, it was possible to light the actors in a sculptural manner and prevent the lighting cues from being too flat and front light focused.

2.3: Costumes

Figure 10: Costume Flexibility



Costume renderings were projected onto the actors by scanning and digitizing the costume renderings and projecting them onto specific locations on the stage that the actors could easily find so as to stand in the right place for the costume to “fit”. As long as the actor remained motionless, it was possible to change their costume for dramaturgical and thematic purposes.

Figure 11: Costumes as Dramaturgical Device



Within a single speech, several different costumes could be projected on an actor, allowing for the character to be represented visually at several different points in their life in accordance with the text they were speaking

Figure 12: Costume Poses



In order for the costume to be rendered in the poses that the actors would be “wearing” them in, it was necessary to photograph them standing as they would be during the show. This helped to ensure a proper “fit” but also made it essential for the actors to make that exact pose during every performance.

Figure 13: Costume Challenges



The actors had marks on the floor that ensured they were standing in the correct place for a costume to be projected on them. However, if their bodies were twisted slightly or their weight was shifted, it was still possible for the costume projection to look drastically wrong.

Chapter 3- DVI Advantages/Challenges

Because this design was similar to previous designs executed by Robert Gardiner, several challenges inherent in the use of DVI on this scale were anticipated. Strategies to mitigate these challenges were developed and employed during the production.

The most severe issue related to DVI is the relative lack of brightness of low to mid range commercial projectors in comparison to traditional stage lights. Within *MK Woyzeck* this issue was approached by using 5 identical Panasonic DLP projectors and manipulating their projected content to light the actors as brightly as possible when appropriate. However, the adaptation of content to ensure adequate brightness did tend to obscure or diminish the content itself. This was a consequence of the projectors themselves, rather than being an inherent flaw in the concept of DVI and could have been solved using more expensive projectors with better brightness and a higher contrast ratio. Furthermore, traditional stage lights were consciously not used, because they drew attention to the relative dimness of the projectors.

Another typical challenge of DVI at this budget level is the fact that the relatively small number of projectors used limits the potential number of angles that light can be projected from, as compared with the multiple angles that are typically utilized within a standard lighting design. In *MK Woyzeck*, this was overcome by using the aforementioned 5 projectors, and by hanging them from 5 distinct positions, which allowed for top, front, high front, and high side positions to be used, which are fairly standard lighting positions. Finally, because the projectors do not emit the same quality of light as traditional stage lights, actors have had difficulty determining whether they are correctly within their light or not. Specifically, because costumes were being projected onto the actors within *MK Woyzeck*, it was imperative that they be able to stand on the exact same spots during every performance to ensure that their costume was correctly projected. By using a combination of tape marks on the floor, and by projecting single pixels from the top projector onto the floor of the stage, the actors were able to fairly consistently recreate their movements on stage.

3.1: General Advantages

Figure 14: Content Projection



One of the major advantages of digital projectors is the ability to use images to create content on the set and to light actors simultaneously. By lighting actors with portions of the image that create the backdrop, it is possible to more fully immerse them within the digital environment created by the projections.

Figure 15: Multiple Areas of Focus



Isadora, the projection software that was used to create the design, allows the user to easily use only a portion of the projector's available pixels to project content. Thus, it is very easy to create isolated areas and multiple, isolated areas of focus on the stage.

3.2: General Challenges

Figure 16: Projected Grid



The Panasonic projectors that were used project a series of pixels that can be either filled with content or “turned off” through the use of tiny mirrors. However, because all the projectors had very wide lenses in them, the pixels projected were quite large, and could be seen as a grid on the actors’ faces and costumes from close range.

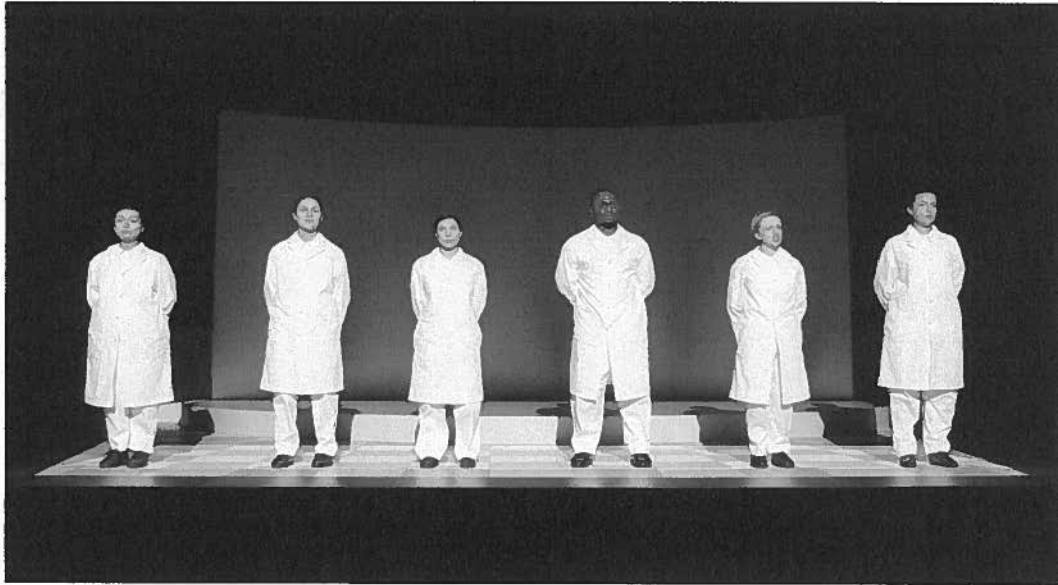
Figure 17: Illumination Challenges



Although the most striking and interesting digital content tended to involve a fair amount of colour, it was difficult to adequately light the actors if saturated colour was projected at all. Thus, there was a constant balance that needed to be struck between lighting the backdrop with deep colours and properly lighting the actors.

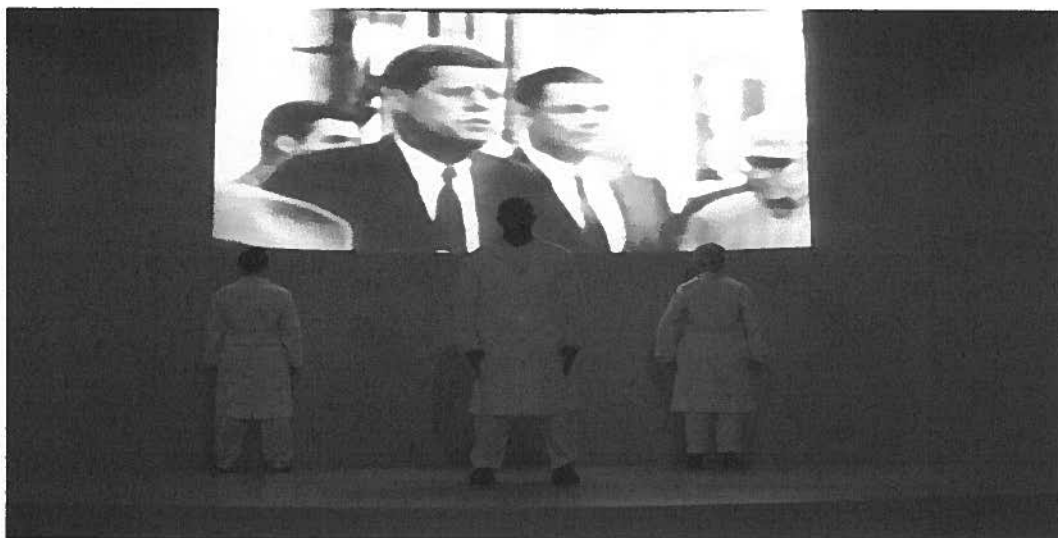
3.3: Specific Advantages to *MK Woyzeck*

Figure 18: Pure White Light



The Mercury-based lamp in the projector emitted a very pure white light that helped create the experimental, sterile feel to the “laboratory.”

Figure 19: Historical Content



Archival images and video content could easily be included into the show to provide context and situate scenes in certain times and places. (Archival footage of JFK introducing Robert McNamara as Secretary of Defence)

Figure 20: Easy Adaptation of Cues



-Early version of dilapidated House Scene

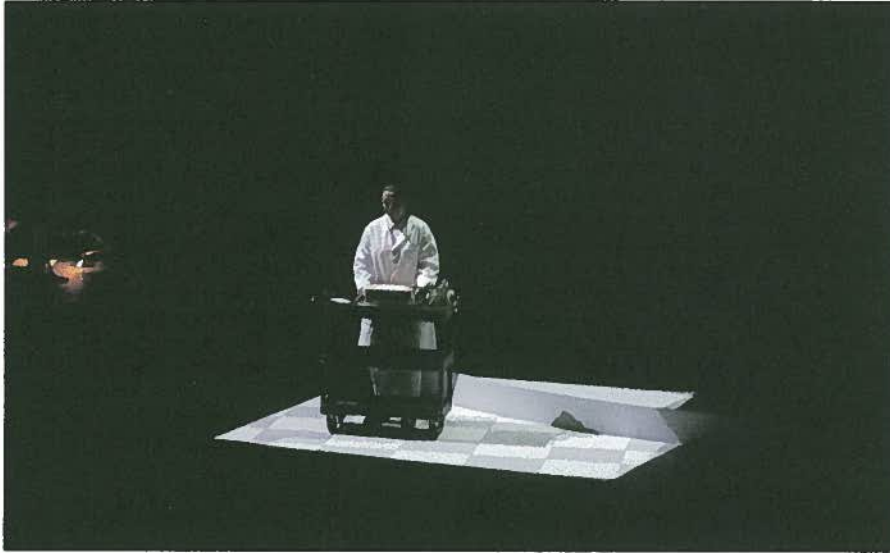


-Final Version of Cue

Because all of the content was digital, it was very easy to adapt and rebuild cues as the show was re-devised and changed during the rehearsal and technical process. Whereas changing a backdrop in a traditional theatre production might involve re-painting and re-rigging, in *MK Wozyeck*, it could all be done quickly and easily using digital image manipulation.

3.4: Specific Challenges for *MK Woyzeck*

Figure 21: Small White Boxes



Although the use of high angle projectors created favourable lighting angles, it also ensured that, in order to keep the spill of the boxes relatively small on the stage, the testimonial boxes would have to be as small as possible. Because of the high angle, that ensure the actual playing space for the actor was much smaller than the box itself, which forced them to have a fairly small playing area to use.

Figure 22: Background Content

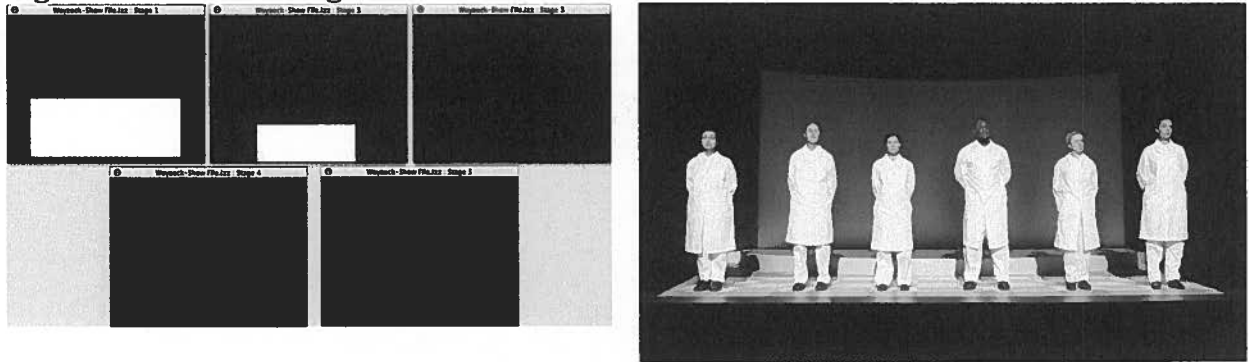


There were cues within the show in which background content was over-used and over-relied upon. In the cue above, the picture is difficult to decipher and does not adequately light the actors or set the scene.

Chapter 4: DVI Cue Construction: 5 Examples

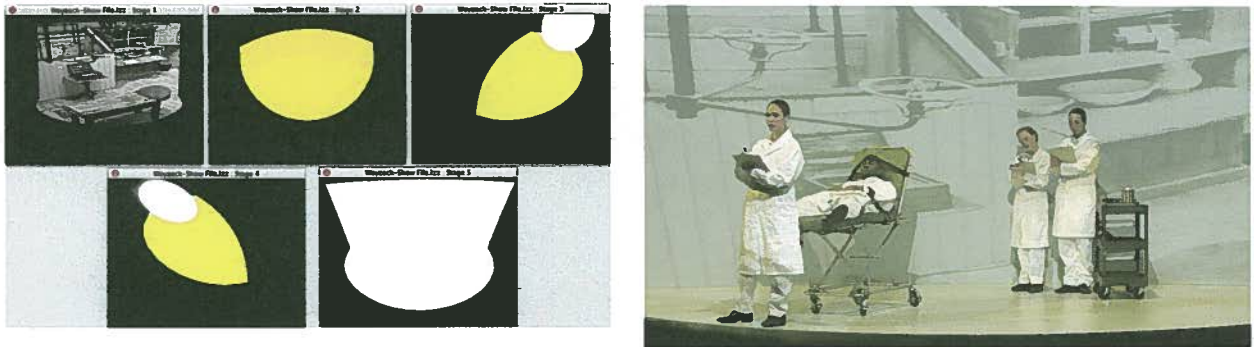
The projection software Isadora allows for multiple projectors to simultaneously be sent independent digital content. Using the Preview Screens within Isadora, it is possible to view the content that is being sent to each projector in isolated windows. The Preview Screens display the building blocks of each cue, much as a traditional lighting board displays the values that each channel is receiving. However, the Isadora Preview Screens are unique because they graphically display cue content as opposed to the solely numeric representations of cues on a lighting console. By examining several screenshots of the preview screens, it is possible to discuss the construction of each cue in terms of its individual components.

Figure 23: Cue 3- Prologue



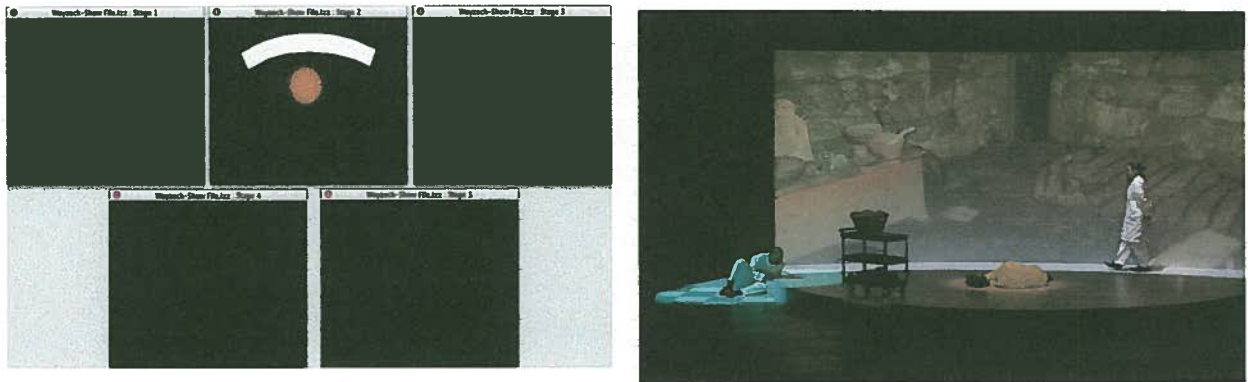
The prologue cue was one of the simplest cues in the show because it involved two white, rectangular shapes that were projected from the front and the top projectors. Within the Isadora software, simple shapes such as ovals and rectangles can be created and manipulated, so no external media or software was required to make this cue. This moment in the show involved the “Scientists” giving an introduction to the audience about their methods and process involving the *MK-Woyzeck* project. The intention of the cue was to create a very harsh and sterile environment to enhance the scientific feel of the opening speech. So, sharp rectangular shapes of a very pure, white light were chosen to mimic the look of fluorescent light while creating a rigid, formulaic area for them to speak from.

Figure 24: Cue 69: Doctor



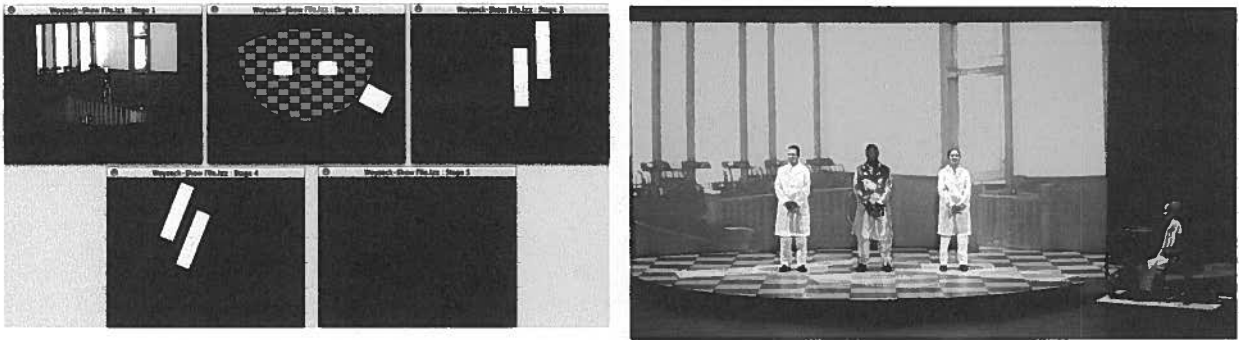
This cue demonstrates one of the more complex cues in terms of layering of different shapes and colours to create a full-stage environment. The backdrop image of the old doctor's office was projected from the low-angle front projector and it both set the scene and created some of the main illumination for the scene. The large, oblong, white image was projected from the high angle front projector. It provided the rest of the main illumination from the front. It can be seen that the white shape somewhat washes out the image of the doctor's office, but that sacrifice was necessary to adequately light the scene. In order to give the doctor's office some colour, yellow shapes were projected from the top, and two high side projectors that covered the entire stage. The colour of yellow was used to make the characters look somewhat sickly and ill, as well as create the yellow floor for the scene. On two of the yellow shapes, white circles can also be seen. These are the two side projectors, and the white circles were used to light the actors when they stood on the extreme edges of the platform and could not be lit by the yellow that was hitting the floor from the sides. Because the light would spill onto the grey and white tile floor and was not that noticeable, it was possible to use white light, which would give a more intense illumination of the actors than the yellow light could provide. The shapes were all created by building a raster of the stage from each projector and then either filling that raster with a specific colour, such as white or yellow, or filling that raster with an image so that the image or shape would be the exact size of the platform.

Figure 25: Cue 117- Woyzeck Box



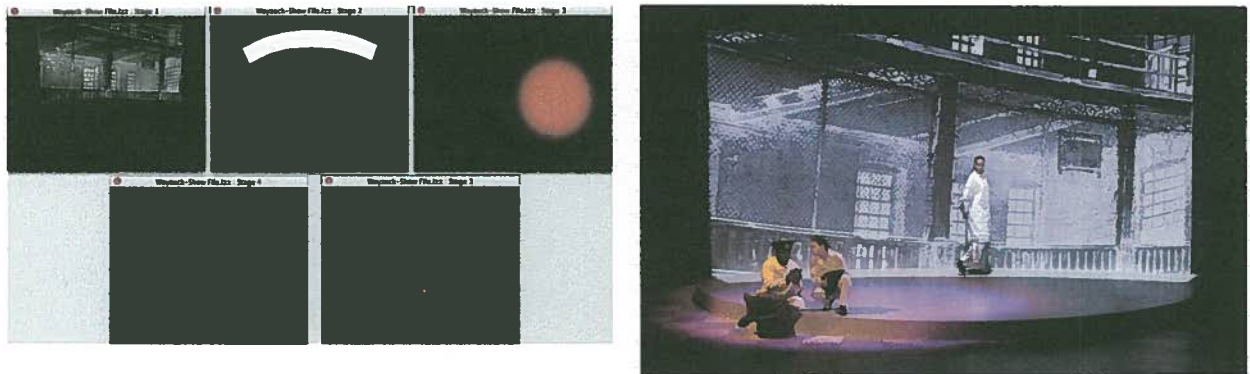
This cue demonstrates how the projectors could easily be used to create multiple areas of focus and isolation on the stage, while keeping portions of the stage dark. The front projector is projecting the image of an old hovel, and is at a low intensity because it is not actually illuminating the actors at all, just providing a backdrop. By projecting it at a lower intensity, its contrast and detail is more apparent. The top projector is projecting the orange circle, and the curved white line. The orange circle was created in Isadora and is being used to highlight the actor lying down on the centre of the stage. The curved white line was created as a track for the standing actor to be able to walk along at the upstage edge of the stage. It was built using a similar process to the rasters that were used to wash the entire stage. It was purposefully made wide enough that if the actor walked along the downstage edge of it, it would also light her face. The blue circle was projected from the high side projector on stage right, which for the sitting actor to be lit from an angle other than front or top, which was attempted whenever possible in order to create more shadowed, sculpted lighting.

Figure 26: Cue 126- JC Costume



This cue demonstrates the use of one of the costume projections, as well as the ability to highlight specific areas within a full-stage cue. The costume and the image of the courtroom are projected from the front projector, and there is a tape mark on the floor in order for the actor to be able to stand in the exact spot necessary for the costume to “fit” him. The top projector is projecting the image of the checkerboard floor as well as tight top boxes that highlight the characters on either side of Woyzeck, as well as highlighting the Judge who is sitting slightly off of the platform. In order for the costume to be visible and not washed out, no other light from any other projector could be allowed to spill onto it. So, for the Doctors to be lit on either side of Woyzeck, tight rectangular shapes were projected from the high side projectors that could illuminate the actors without spilling any light onto either the Woyzeck costume or the courtroom backdrop.

Figure 27: Cue 91: Institution



This cue demonstrates the most concentrated effort to mimic the effect of traditional lighting instruments with the projectors. The front projector is projecting the image of a generic institution that isn't actually illuminating any of the actors. The top projector is projecting the similar track for the actor to walk along as in the Woyzeck Box cue. The top, high front, and high side projectors are projecting warm and cool ovals that are intended to simulate the standard lighting practice of using warm and cool colours from opposite directions in order to create a very sculpted effect on the actor's faces with the cool light filling in the shadows where the warm light does not hit. So, amber ovals are being projected from the stage left and high front projector while cool ovals are being projected from the top and stage right projectors. Although this effect created a fairly interesting effect on the faces and bodies of the actors, the colours did not mix very well on the floor behind the actors, creating an odd mix of amber and purple colours. As traditional lighting instruments tend to mix better, this effect was only partially successful in terms of trying to use projectors as traditional instruments.

Chapter 5: Conclusion

The use of DVI and a devising framework in which the designer was present and involved in the entire rehearsal process was very successful for *MK Woyzeck* in terms of the creation and execution of the design. The use of DVI allowed for the creation of a scientific and experimental aesthetic that supported and enhanced the framework of the show. Furthermore, its use facilitated the role of designer as deviser because of the ability to create and adapt content that could instantly be used during the devising and rehearsal process. Also, being able to anticipate the technical problems and prepare for them during the devising process helped to, hopefully, create a useful model for future DVI productions. Even though the current cost of projectors and projection software makes it difficult for DVI technology to be widely accessible, once projection technology becomes more affordable, the possibility for independent theatre companies to light a show entirely with projectors could become both affordable and feasible. Although it is not necessary for a DVI designer to be present throughout the rehearsal process, it was almost essential during *MK Woyzeck* because it allowed for projected content to be created and tested almost instantly, and thus enhanced the experimental aspect of the devising process. The use of DVI in *MK Woyzeck* demonstrated that digital projectors can effectively be used to create a flexible and experimental design framework in which a designer who is constantly present in rehearsal can be an effective and participatory deviser.

Appendices

Appendix A- Preliminary Design Renderings

Figure 28- Front View



Figure 29- Isolation of Actors

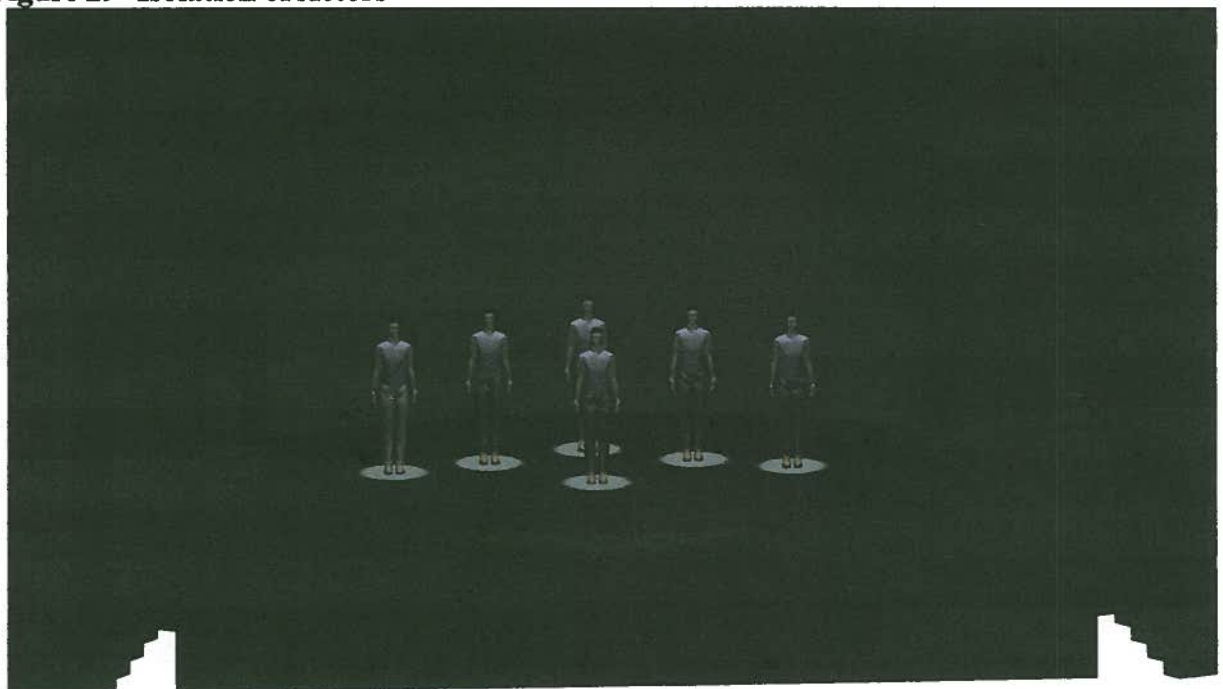


Figure 30- Top View

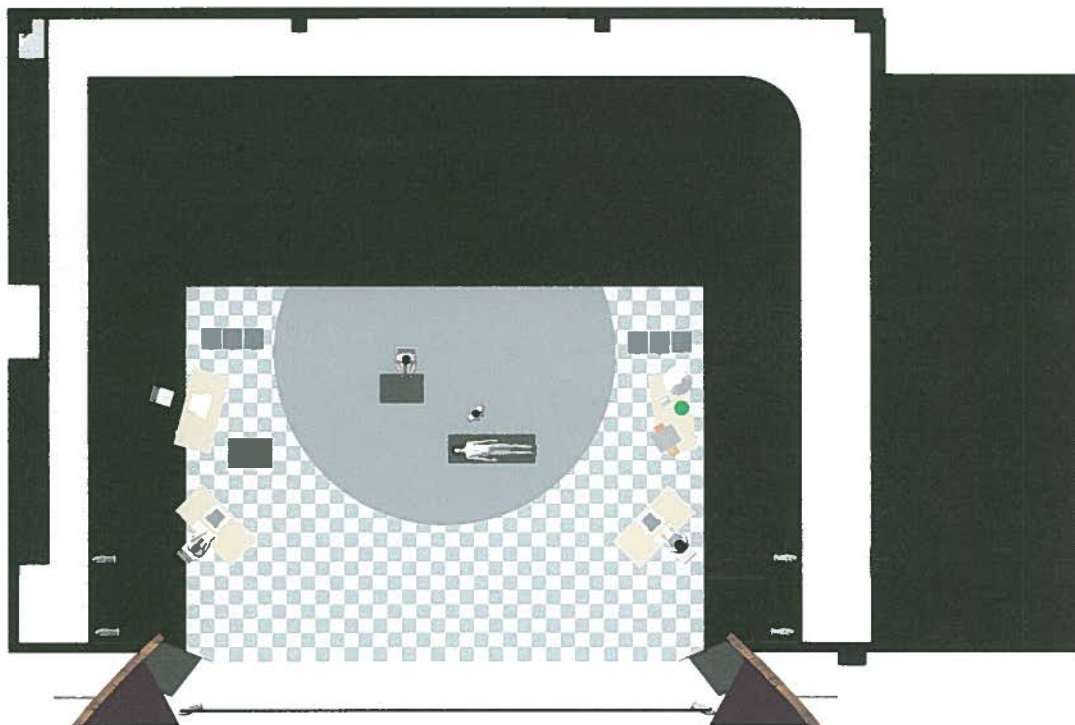


Figure 31- Top Projected Content

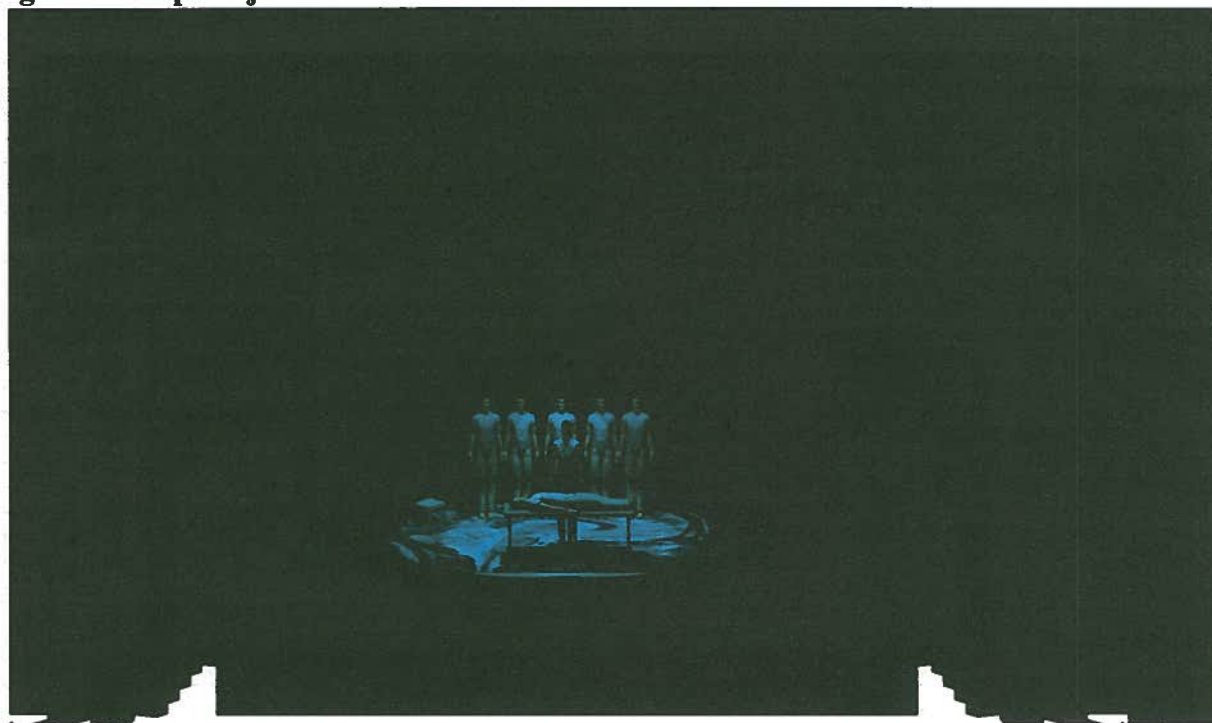
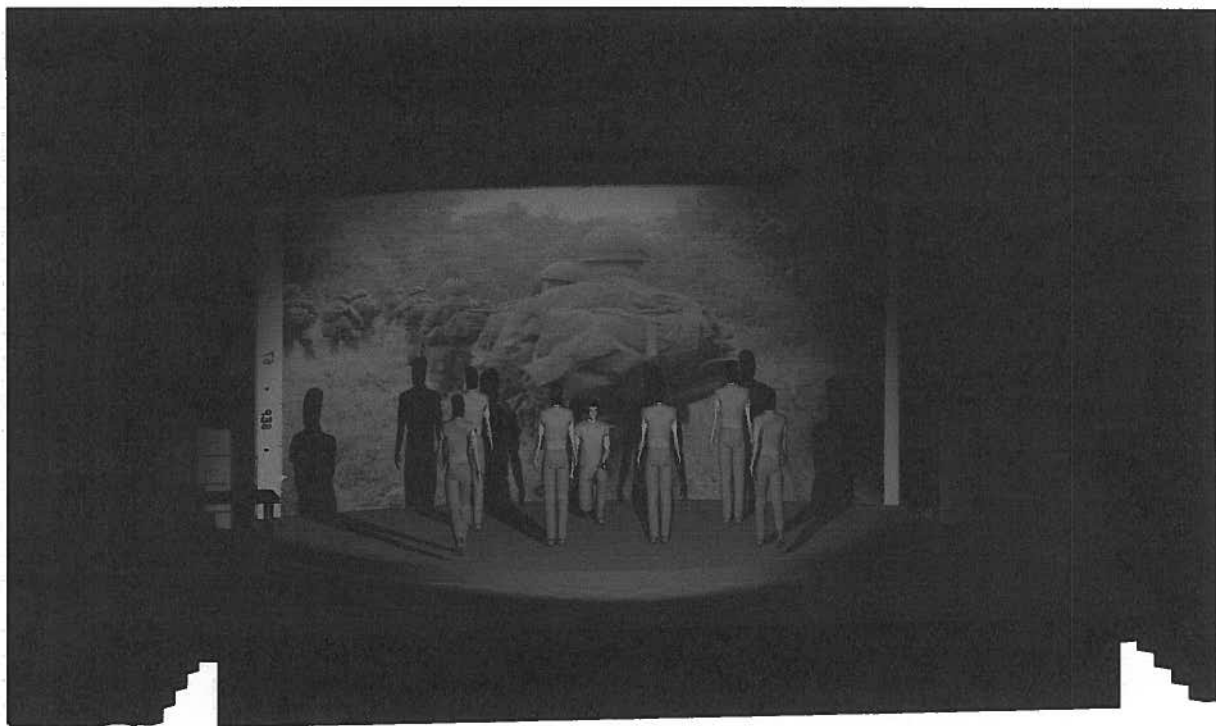
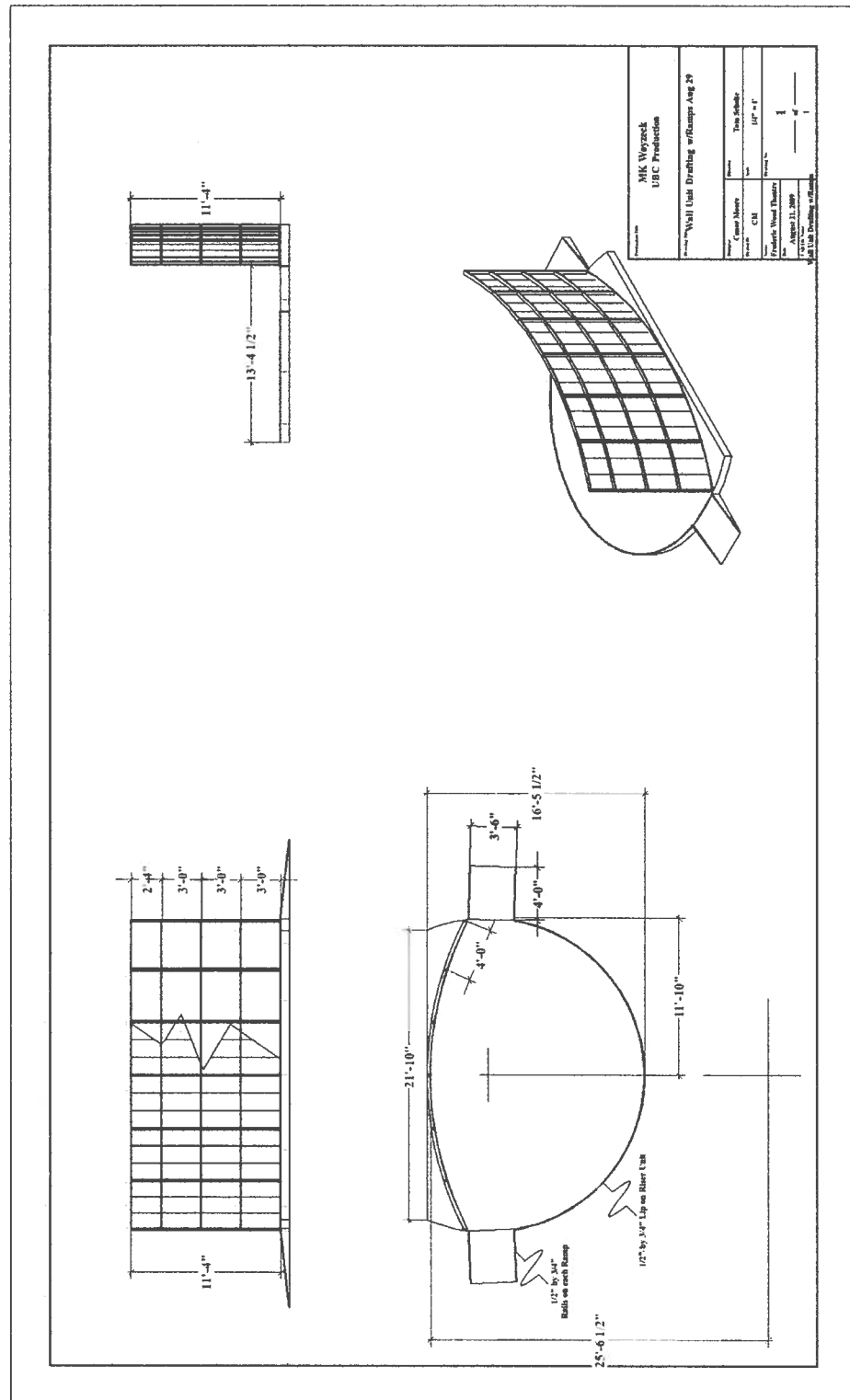


Figure 32- Front Projected Content



Appendix B- Set Drafting **Figure 33- Shop Drawings**



Appendix C- Projector Hanging Positions

Figure 34- Projector Hanging Positions With Throw Distance Indicated

