

## APPENDIX 25 – CROSS SPEC. AND PLANNING

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### **The Cross**

Working Planning Document

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26 March 2005

*Stephen D Robinson*

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## INTRODUCTION

The aim of this working document is to detail the events surrounding the Cross in the Princes Street Easterplay 2005. As planning continues the document is to be updated and ultimately used as a record for the future.

## planning

A initial planning task analysis along with an overall timeline can be seen in Appendix A.

## SITE LOCATION

The area concerned is to the right (west) at the top of the steps on Castle Hill, immediately across the footbridge (south) over the railway from Ross Theatre. It is a flat, rough area with long grass and is bounded by several large trees. Following the retirement of Ian the park Supervisor, David Dorwood is to be the main Point of Contact.



## research & investigation

Prior to designing the cross, research was carried out into existing solutions, including a visit to Dundas Castle. Written permission was obtained from the Parks Dept (Ian Hay) prior to any work commencing. A physical site investigation was carried out by means of excavating a trial pit to determine ground conditions, Gordon Pennykid (2 Oct 04). The results proved that there was no cause for concern with the site ground conditions.

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## optioneering

### ***Crowd Capacity***

Various options were proposed to determine the 'orientation' of the cross in order to achieve the best possible crowd capacity. An angle of North West was chosen to maximise the safe crowd capacity combined with good viewing qualities. The cross will be rotated to face North and to Princes Street after the play. See Appendix B for the options considered.

### ***Specification***

Various cross 'specifications' were considered:

- Three crosses, one main cross to be erected and two 'fixed'
- Light enough to be carried through the crowd by actor
- Ease of erection
- Safety of erection
- Cost
- Orientation and final position
- Long term base to be left in place

A style similar to that of Dundas with various improvements was chosen to allow ease of design and construction, combined with practical ergonomics for the play.

## **DESIGN plan**

The Cross is to be designed by Douglas Johnston and approved by EPOG, James Hunter and David Dorwood. The Cross design can be seen at Appendix C.

## **construction plan**

### ***Contractor***

It was hoped that the Cross would be constructed on a 'friendly contact favour' basis through the designer. This would minimise cost and inconvenience.

In the end, the cross was constructed by three separate contractors, all sourced through Douglas Johnston.

### **Base**

The concrete base foundation was constructed by 'Crummock Scotland Ltd, Butterfield Estate, Bonnyrigg, Midlothian, EH19 3JQ'. This contact was sourced through the designer and donated in its entirety free of charge. Steve Robinson, Douglas Johnston and David Dorwood met with the contractor on site prior to then event to arrange a suitable date for the works. All efforts were taken to cause minimum disruption to the park and public.

### **Steel Baseplate**

The steel baseplate hinge mechanism was constructed by 'DCB Welding Design, Unit 7, Tweedvale Mills West, Walkerburn, EH43 6AB' at material cost only for approx £300. Great efforts were made to find a fabricator who could work with the joiner in order to ensure a close fit between the two main elements of the cross.

### **Timber Cross**

The cross itself was made from pitch pine by 'Eddie Fraser Joiners, Purvis Hill Garage, Walkerburn, EH43 6AY' completely free of charge. They also provided a light cross beam to be used by the actor.

### **Ropes**

2 x 10m hauling ropes and small hand ropes were provided by Alan Jeffreys.

### ***Timeline***

The Parks department (Ian Hay) requested that the ground works be complete before the Spring. To that end it was originally proposed that all groundwork construction be complete by the end of 2004. Fabrication of the cross itself could go on until Jan/Feb 2005.

In the end, the base was installed in February 2005 and the cross finalised at the end of that month.

### ***Parks Department***

Once the design was approved, the construction plan was approved with the parks department in order to minimise inconvenience with the public. Some concerns were raised over how the area

would be left after removal of the cross – it was agreed at this stage to backfill and allow the grass to grow back to its natural state.

## ***Health and Safety***

A detailed method statement and risk assessment can be found at Appendix D.

## **EXECUTION PLAN**

A detailed timeline of the events surrounding the cross immediately prior to the play can be seen at Appendix E.

## ***Storage***

The cross needs to be stored on a long term basis until Easterplay 2006! It was proposed that the cross could be placed on display in a suitable church.

In the end the cross will be stored in Stenhouse St Aidan's Church of Scotland (Rev Colin Strong, [ColinAStrong@aol.com](mailto:ColinAStrong@aol.com), 0131 337 7711, and Property convenor, Jim Brennan, 0131 453 5592).

It was thought that next year perhaps the cross could move location to another church in the city as a reminder of the play, and of course the true meaning of Easter!

## ***Transport to site***

The joiner delivered the cross to site in the first instance and thereafter it was transported by Margaret Parker and her horse box (0131 449 3850, 07778627811, sourced through Rachel Wood).

## ***Test and Commission***

The cross elements were tested in isolation (base and hinge, hinge and cross) and then it was assembled for the first time prior to the cross rehearsal on Sat 19 Feb 05.

Douglas Johnston provided the necessary test certificate for the insurance file.

## ***Rehearsals***

Several methods were experimented with to operate the cross, first without loading (person) and then with.

## ***Instructions for use***

In the end a minimum of 5 people were required to operate the cross with loading – one at the hinge, four pushing at the start, then a transition to two on the forward ropes and two pushing the cross. In order to lower the cross the same method can be applied in reverse. The 10m hauling ropes were tied in a 'clove hitch' around the ends of the cross beam at the rope mid points.

## ***In place***

The cross remained in place for 5 days after the play. It was rotated at approx 1900hrs on Sat 26 March 05 and floodlit – it was then lowered at 0700hrs on Sun 27 March and decorated with flowers. See further CrossWatch details below.

## ***Removal***

After the removal of the cross the bolts were protected with 'Denzo tape' purchased at 'Builders Supply Company, 8 Inglis Green Road, 0131 443 4474' and backfilled. The concrete is 200mm from the surface at its deepest. Care was taken to mark the location of the base. See figure below.

## ***Programme***

Appendix E shows a detailed timeline of the events surrounding the cross.

## **Cross watch plan**

In order to achieve maximum effect and for security purposes it was proposed that the cross be floodlit between the hours of 1800 and 2359 hrs. This was agreed by James Hunter and David Dorwood. It also had the secondary benefit of reducing insurance.

## ***Programme***

Appendix F details the CrossWatch plan.

## ***Floodlighting Plan***

Julian Dines and the Warehouse provided the necessary equipment for floodlighting the cross. One small petrol generator (15l tank, lasts 4 hours), cabling and four lights.

## **conclusion**

It is hoped that this will act as a working document to assist planning the events surrounding the cross for Easterplay 2006!

Perhaps it will be necessary to move to another site due to crowd capacity? Perhaps we should have 3 crosses?

## Appendix A PLANNING TASKS & TIMELINE Tasks

Task	Consideration	Implied Task	Comments
Consider and document the options for how the cross might be designed	Documents Photos Site visit Dundas Sketches Discussions Records	Research <ul style="list-style-type: none"> <li>• Contact Surrey</li> <li>• Contact Dundas Castle</li> <li>• Contact Surveyor</li> <li>• Contact park staff</li> <li>• Contact park manager</li> <li>• Gather research</li> </ul> Produce options with designer <ul style="list-style-type: none"> <li>• Determine base design (based on ground conditions)</li> </ul> Consolidate options Present options to steering committee for review Reach a decision on design option	
Establish what the Parks dept will allow us to do with the ground at the site	Establish criteria, how deep excavation?	Contact Parks Determine ground conditions and limits on excavation Obtain Permit to dig Contact services	David Dorwood POC Site Investigation with surveyor 2 Oct 04
Liase with the cross designer to facilitate a design that is suitable for the performance and acceptable to the Parks dept	Availability? Timescale? Role? Produce actual design on paper? Drawings?	Contact Surveyor Contact Designer Agree timescale Submit design proposal to designer Produce design Designer submit design solution to Council for approval	
Identify the construction materials and review whether current budget for the cross is accurate (£500)	Timber Source? Buy independently? Contractor supply?	Identify sources Review budget	DJ sources
Liase with contractor to construct the cross and review whether current budget is accurate.		Identify contractors for tender Design out to tender Review budget Choose contractor Submit Design to chosen contractor	DJ sources
Consider strategy/timeline for how the cross is made and put into place	Rehearsals? Constructed by date? Floodong?	Produce outline timeline Test and commission – produce docs Produce execution plan (transport, erection and take down) <ul style="list-style-type: none"> <li>• Produce detailed timeline</li> <li>• Transport to Storage</li> <li>• Transport to Site</li> <li>• Personnel involved</li> </ul>	Transport – Margaret Parker – confirm? Email 25 Jan
Consider a strategy for how the cross is kept secure over several days after 26/3/05	Security team Inspections	Produce cross watch plan (security team) <ul style="list-style-type: none"> <li>• Personnel involved</li> <li>• Safety policy</li> </ul> Floodlighting plan (Aid to security and visual impact)	Sound team to provide generator and light?! (Cameron) email 25 Jan Simon who one of R's youth group

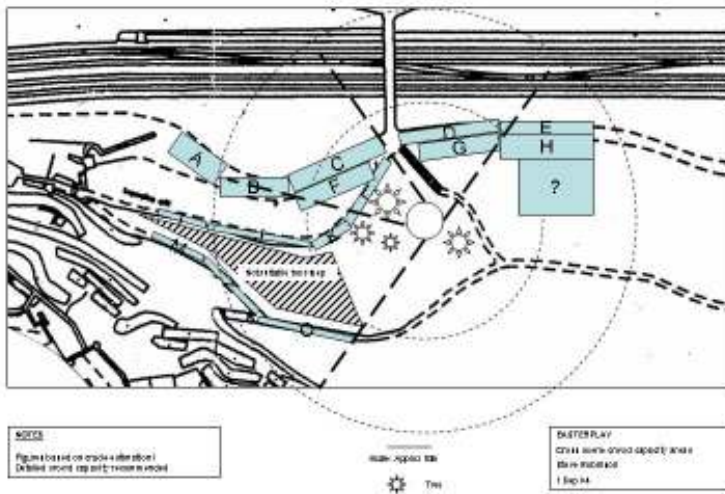


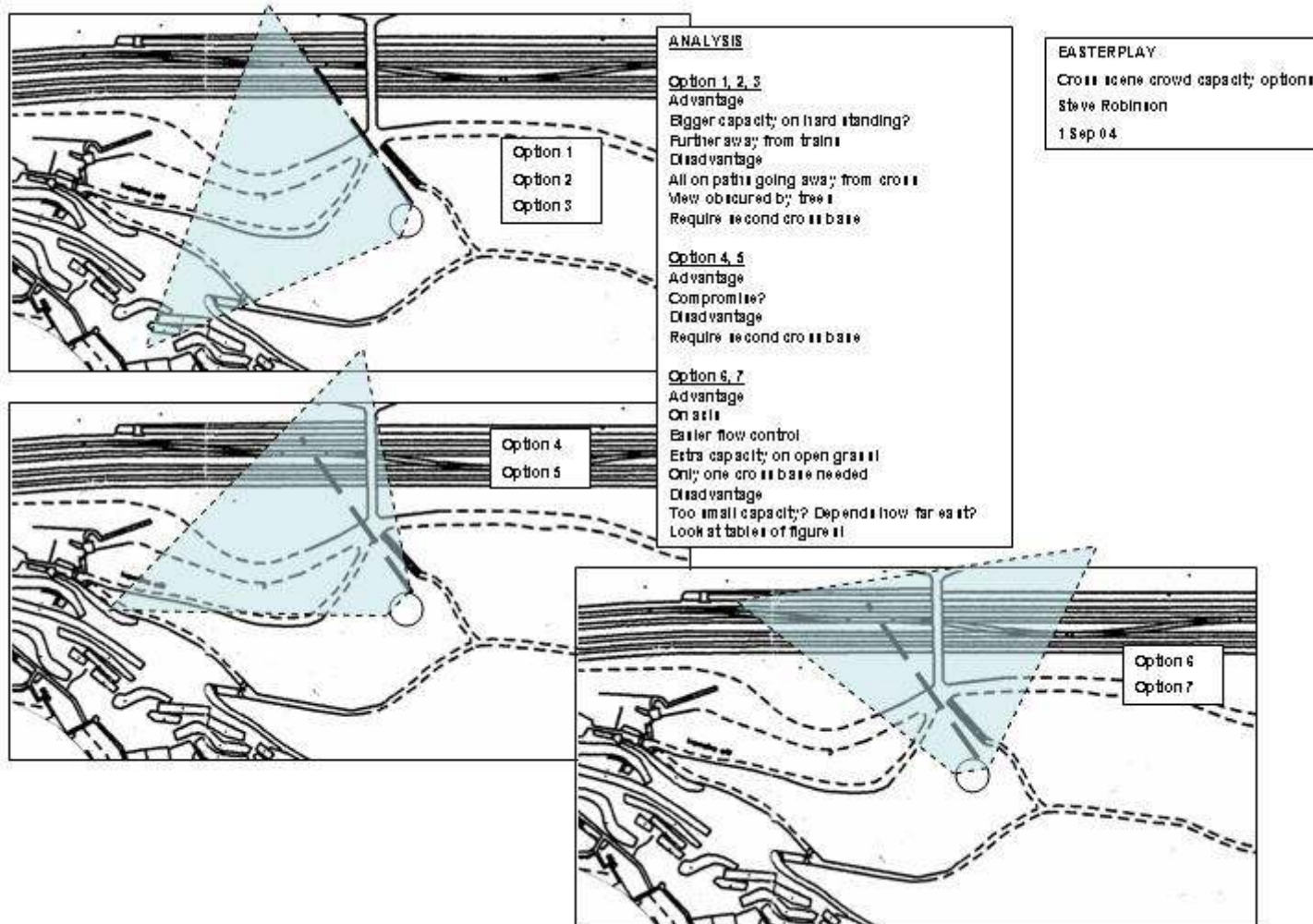
		<ul style="list-style-type: none"> <li>• Power supply, generator, cost, Fixed supply, Ross theatre</li> <li>• ID Services POC</li> </ul>	
Make arrangements for the taking down and storing of the cross	Dismantle Store? Duration?	Identify suitable storage area Produce dismantling and storage plan <ul style="list-style-type: none"> <li>• Produce detailed timeline</li> <li>• Transport to Storage</li> <li>• Personnel involved</li> </ul>	Stenhouse St Aidan's Church of Scotland Rev Colin Strong. He appears to be a rather understated man from my emails with him, but very supportive of the play. His email address is ColinAStrong@aol.com and phone number is 0131 337 7711 – email sent 25 Jan – reply received. Could you please contact Jim Brennan, who is our property convenor. His phone no is 0131 453 5592. He was the one who made the offer, and will be able to keep you right about practical details.

### Timeline

Intended Date	Reviewed Date	Task	Responsible	Comments
27/7/04		Tasked	SDR	
31/8/04		Conclude research and desktop study		
		Optioneering		
30/9/04		Consolidate options		
30/9/04		Present options to steering committee	SDR	
30/9/04		Reach a decision on design option	RW	NW Option 8, Sep 04
2/10/04		Submit design proposal to designer	SDR to Douglas Johnston	
2/10/04		Site Investigation Trial Pit with Gordon Penykid	SDR and GP	
31/10/04	End Nov	Designer submit design solution to Council for approval?	Douglas Johnston	
15/10/04	End Nov	Approval from Council on Design		
16/10/04	End Nov	Design out to tender	SDR/ Douglas Johnston	
31/10/04	End Nov	Choose contractor		
1/11/04	End Nov	Submit Design to chosen contractor	SDR/ Douglas Johnston	
30/11/04		Construction complete		
		Move into storage		
Jan		Site visit with David Dorwood		
15 Jan 05		Ground works complete		Possibly delayed by order of James Hunter
15 Jan 05		Cross contractor appointed and construction start		
Jan 05		Cross hinge fabricator		
19 Feb		Cross construction complete		
Sat 26 Feb 05		Test and commission – Base Test in Gardens TBC		
Sat 5 Mar 05		Test and commission – Base Test in Gardens TBC		
Sat 12 Mar 05		Test and commission – Base Test in Gardens TBC		
Sat 19 Mar 05		Test and commission – CROSS REHERSAL [confirmed]		A few weekends before
25 Mar 05		Dress rehearsal		
26/3/05		Easter Play		
		Set up Floodlight		
		Cross watch		
31/3/05		Take down cross and move to storage		

## Appendix A Orientation Options





Summary table showing crowd capacity

Option	Explanation	Area	Persons per square metre		
			2	3	4
Option 1	Cross pointing due west, no grass, no top path	374	748	1122	1496
Option 2	Cross pointing due west, no grass, inc top path	478	956	1434	1912
Option 3	Cross pointing due west, inc grass, inc top path	542	1084	1626	2168
Option 4	Cross pointing North West, no grass, no top path	454	908	1362	1816
Option 5	Cross pointing North West, inc grass, no top path	582	1164	1746	2328
Option 6	Cross pointing North, no grass	426	852	1278	1704
Option 7	Cross pointing North, inc grass	694	1388	2082	2776
Total	All areas	906	1812	2718	3624

EASTERPLAY  
 Cross scene crowd capacity calculations  
 Steve Robinson  
 1 Sep 04

Table to calculate crowd capacity

Area	Type	Length	Breadth	Area	Option 1	Area	Option 2	Area	Option 3	Area	Option 4	Area	Option 5	Area	Option 6	Area	Option 7	Area
				906	7	374	10	478	11	542	8	454	10	582	7	426	10	694
A	Open land standing	12	7	84	1	84	1	84	1	84	1	84	1	84		0		0
B	Open land standing	14	5	70	1	70	1	70	1	70	1	70	1	70	1	70	1	70
C	Open land standing	20	5	100	1	100	1	100	1	100	1	100	1	100	1	100	1	100
D	Open land standing	20	4	80		0		0		0	1	80	1	80	1	80	1	80
E	Open land standing	20	4	80		0		0		0		0		0	1	80	1	80
F	Grass	16	4	64		0		0	1	64		0	1	64		0	1	64
G	Grass	16	4	64		0		0		0		0	1	64		0	1	64
H	Grass	20	7	140		0		0		0		0		0		0	1	140
I	Path	12	2	24	1	24	1	24	1	24	1	24	1	24		0		0
J	Path	22	2	44	1	44	1	44	1	44	1	44	1	44	1	44	1	44
K	Path	10	2	20	1	20	1	20	1	20	1	20	1	20	1	20	1	20
L	Path	16	2	32	1	32	1	32	1	32	1	32	1	32	1	32	1	32
M	Path	12	2	24		0	1	24	1	24		0		0		0		0
N	Path	20	2	40		0	1	40	1	40		0		0		0		0
O	Path	20	2	40		0	1	40	1	40		0		0		0		0

## Appendix B Cross Design

