



**STRUCTURAL ENGINEER'S
METHOD STATEMENT
ON
THE DEMOLITION
OF
THE OLD AIRPORT TERMINAL BUILDING
AT
WINSTON CHURCHIL AVENUE**

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1.0 INTRODUCTION.

This method statement deals with the demolition of the Old Airport Terminal building located off Winston Churchill Avenue. This method statement is intended for use by the Principal Contractor as an outline document which will be developed further once the site is taken over. The boundaries of the site are formed by Winston Churchill Avenue to the west and north, RAF Gibraltar to the south and the northern dispersal pan to the east.

The Old Airport Terminal comprises seven structures which have been constructed in phases as follows:

- Original Terminal Building: 1959;
- Terminal Extension: 1981/1982;
- Prefabricated Single Storey Offices: 1989;
- Arrivals Area: 1989;
- Departures Lounge: 1989;
- Baggage and Handling Area: 2002;
- Cargo Building: 2002.

The structures comprise varying structural forms as identified in Chapter 2 of the Gifford report 19827/DEM/R01.

Reference should be made to the services clearance information from the various utilities companies in Appendix F of the Gifford report 19827/DEM/R01.

The works will be undertaken using a combination of mechanical plant and hand held tools – see resources below.

1.1 Scope of Works.

- a. Check the services clearance certificates and complete an additional scan of the area, and identify all services with regard to possible discrepancies from the clearance certificates.

- b. Inform all the operatives of the method statement and risk assessments prior to starting works. The Site Engineer & Site Foreman should sign the method statement and

risk assessments to confirm their understanding. Any queries should be addressed to the H&S Manager.

1.2 Location.

The works will take place within the site of the Old Terminal Building off Winston Churchill Avenue as shown in Appendix A.

1.3 Start Date.

To be confirmed and pending the relocation of the various current users of the old terminal building offices.

1.4 Management Team & Resources.

The Management Team for the demolition is as follows:

- Mr Fernando Monteverde, Monteverde – Project Manager;
- Mr Jason Segui – Assistant Project Manager, Monteverde (Mob. 57259 000);
- Mr Miguel Rios – Site Manager, Monteverde (Mob. 54169 000);
- Mr Chris Holgado – Demolition Foreman, Monteverde (Mob. 56489 000);
- Mr Stephen Shacaluga – Safety Consultant, Monteverde (Mob. 56707000);
- Mr JJ De La Paz – Structural Engineer on behalf of Monteverde (Mob 58008769).

We anticipate that there will be 10 No. Manual Operatives on site during the soft strip operations.

Working Hours: 8am to 7pm Monday to Saturday. Working hours outside those stipulated above to be agreed with the Project Manager.

The following resources will be required for the works:

Hand held tools with the provision for a portable generator if required.

Mobile access platforms to undertake the soft strip works.

Mechanical plant and excavators will be required for demolishing the superstructure.

2.0 IDENTIFIED RISKS AND CONTROL MEASURES.

This list assumes that the entire building will be on landside when it is demolished.

FOD Management. The site shall be kept free of loose objects, or objects that can easily become loose, that can be blown onto aircraft operating areas by (strong) winds or can migrate onto these areas otherwise (e.g. transported by vehicle tires). For example: plastic bags, empty cement bags, plastic bottles, metal sheets, cardboard boxes, plastic sheets (e.g. tarpaulin) pieces of wood, pieces of rebar, stones/aggregate, screws/bolts/nuts, etc. Fencing between the work site and airside areas of the airfield (if applicable), shall be installed prior to works commencing to prevent FOD from passing through the fence.

Bird Management. Ensure that no standing water is present on site. Standing water will attract birds that cause a risk of birdstrike to aircraft landing or taking off at the airport. Also food waste and waste that could attract birds shall be removed from site immediately.

Obstacle Limitation Surfaces (OLS). Ensure that no objects shall be placed or left in any location where they infringe any of the obstacle limitation surfaces (in this case the transitional surfaces, which starts 75m from the centreline of the runway and slopes up and away from the runway under a 1:7 slope).

The OLS level at the southern edge of the old terminal building is at approx. 18m above ground level. At the northern edge of the old terminal building the OLS is approx. 35m above ground level. If cranes are planned to be used that will breach the OLS, approval needs to be obtained well in advance from RAF-Ops and ATC.

Dust Management. Ensure that dust is kept to a minimum and provide suppression systems (e.g. water sprinklers) where required. Dust can be a hazard to aeronautical safety, but it also is to the H&S of the general public, the staff working on the airfield and passengers boarding aircraft on the adjacent aircraft parking aprons.

Measures will be put in place to limit dust in accordance with current Health and Safety Policies. Advice will be sought from RAF Gibraltar and the MOD as necessary.

Light management. If works are planned to take place during the evening/night, when it is dark, but the airfield is still operational, lighting used to illuminate the work areas shall be such that it does not distract or hinder pilots and air traffic controllers.

Asbestos. The studies commissioned by the Client confirm that there is no asbestos in the building.

Existing Services. There may be underground services in the area and reference should be made to all the available services clearance information. Refer to Appendix F. There are no overhead cables to the entrance of the site.

Uncontrolled Collapse of Buildings. The buildings will be demolished in a controlled manner. A vibration and movement monitoring regime will be put in place if required.

2.1 Designer's Risk Assessments.

Please refer to the demolition specific risk assessment in Appendix B.

3.0 METHODOLOGY.

The Demolition Contractor shall contact ATC and RAF-Ops before the works are started to inform them about the work methods and programming.

General.

The site will be secured from all the neighbouring properties, roads and Winston Churchill Avenue to prevent unauthorised access.

A fence line will be set up along the boundary of the building to be demolished with a minimum offset of 3m from the face of the external wall facing Winston Churchill Avenue to the west and the northern dispersal pan to the east. The fence should be checked at cease works daily. Fence to be close boarded 2.5m tall.

An appropriate propping arrangement will be put in place by the contractor if required to ensure that adjacent structures remain stable throughout the works.

Any demolition material will be cleared from the buildings regularly to prevent overloading.

No persons will be permitted within the fence boundary line.

The structure will be demolished into the building/site footprint.

Should it be required a condition survey of all the properties in the vicinity of the site will be undertaken by the Demolition Contractor for record purposes.

A vibration and movement monitoring regime will be put in place if required.

The foreman will inspect and monitor the workspace and neighbouring structures to remain to identify any possible damage caused by the demolition process. Should it be necessary vibration and movement readings will be taken periodically.

The demolition works will be undertaken using hand tools and mechanical plant.

The building will be demolished into the site footprint.

Demolition debris will be disposed off site unless required for future use as a piling mat.

Sequence of Demolition.

- Erect a secure fence to the perimeter of the site. Fence to be close boarded 2.5m tall.
- Isolate all services and produce isolation certificates.
- Soft strip – services, fixtures and fittings.
- Remove all existing plant and equipment.
- Remove roof covering and windows.
- Install vertical props to buildings adjacent to those being demolished.
- Once roof is removed determine the stability method and install temporary bracing if required.
- Demolish the surrounding walls along the first floor perimeter.
- Demolish the upper floor elements in a controlled manner.
- Demolish the frame and wall elements to ground floor (slab) level or a level agreed by the Engineer and the Project Manager.

Demolition Sequence particular to the main concrete frame building.

- a) The demolitions will be carried out by mechanical means using a Komatsu PC 340. The arm will be provided with a heavy duty crusher/pincer head specially developed for demolition of reinforced concrete structures. An exclusion zone shall be marked out on site and made secure with heras fencing, corresponding to a distance of 6m from the perimeter of the building to be demolished.
- b) The excavator will be sited on the West side of the Air Terminal Building and proceed with the demolition commencing at the Northern end and proceeding in a southerly direction.
- c) The excavator will commence with the demolition of the roof slab, followed by the reinforced concrete arched beams and columns. As reinforcement bars become exposed, the excavator operative will cut through these with the pincer head.

- d) The broken up material will be grabbed or swept along in a southerly direction. Periodically, the excavator will cease operations, ensuring there are no structural or masonry elements in danger of collapse, or in a precarious situation.
- e) The rubble generated by the demolitions will be scooped up by means of a mechanical shovel and loaded onto tipper lorries, and carted away to an approved tip. The contractor will implement dust suppression measures such as wetting down during the demolition works. A banksman will be available to control / assist construction traffic movements onto and off the main public road.
- f) Once the buildings have been fully demolished, any ground floor slabs or foundations within the specified depth, will be broken up by means of a conventional "Poclain" excavator with a hydraulic pecker. Cart away all arisings to an approved tip.
- g) On completion of all demolition works the Contractor will thoroughly sweep up the whole site and leave the site hoarding for another contract.

Demolition Sequence particular to the steel frame building.

- a) Commence demolition with a long reach excavator Komatsu PW 200 (with a reinforced cabin roof and sides) with shear cutters at the end of its dipper arm – Refer to Appendix C for data sheets and literature.
- b) The excavator shall be positioned along the west facade of the building and work in an easterly direction. Start cutting the roof cladding and the upper part of the side steel cladding, always allowing the cladding sheets to fall inwards and in a controlled manner. In the event of high winds, the removal of the cladding works should stop to prevent steel sheet fragments from blowing onto the airfield.
- c) Proceed cutting the steel purlins and rafters and then the steel columns, always working top-down and avoid removing all the steel bracing members in one operation. The steel bracing should be removed in sequence as the steel structural elements are being demolished, and as advised by the structural engineer on site.

- d) Continue demolition to ground level always ensuring that the steel structure is demolished inwards, and that the lateral stability of the adjacent structure (to be demolished in the next stage) is not temporarily jeopardised. In the case of the large steel column sections, it may be necessary to hot cut the column flanges at base level, prior to using the hydraulic cutters.

4.0 LEGISLATION.

The demolition contractor shall comply with the following building regulations and ensure that all subcontractors are made aware of their obligations for compliance:

- Institution of Civil Engineers Demolition Protocol;
- The Environmental Protection Act, 1990;
- The Control of Pollution Act, 1990;
- The Construction CDM Regulations, 1998;
- The Control of Asbestos at Work Regulations, 2006;
- The Asbestos (Licensing) Regulations, 1998;
- The Control of Lead at Work Regulations, 1998;
- Health and Safety at Work Regulations, 1999;
- The Noise at Work Regulations, 1989;
- The Provision of Work Equipment Regulations, 1992;
- The Health and Safety (First Aid) Regulations, 1981;
- The Manual Handling Operations Regulations, 1992.
- The Control of Dust Regulations, 2010.

5.0 EMERGENCY PHONE NUMBERS.

- Police: 199/112
- St Bernard's Hospital: +350 200 79700
- Ambulance Station: +350 200 75728
- Gibraltar Defence Police: +350 200 55026 / +350 200 53598
- Royal Gibraltar Police: +350 (200) 48032
- Ministry of Defence(MoD): +350 (200) 55533
- Planning Supervisor : Mr Richard Labrador +350 20049030 / +350 56437000
- Gibraltar Electricity Authority(GibElec) : +350 (200) 48918
- Gibtelecom: +350 (200) 52294
- Sapphire: +350 (200) 47200
- AquaGib: +350 (200) 40880
- Government of Gibraltar Technical Services: +350 (200) 59800
- Enviromental Agency : +350 (200) 70620
- Airfield Ops: Flt Lt Greg Panther +350 (200) 53365

APPENDIX A

SITE & LOCATION PLAN

Location / Site Plan



Old Airport Terminal
building to be
demolished.

APPENDIX B

STRUCTURAL RISK ASSESSMENT

Project Title		HEALTH & SAFETY RISK ASSESSMENT / ACTION PLAN					Sheet No. 1		
DEMOLITION OF THE OLD AIRPORT TERMINAL BUILDING.		HEALTH & SAFETY RISK ASSESSMENT / ACTION PLAN					Date: 20 March 2013		
Designer: CIVIL & STRUCTURAL ENGINEERS		HEALTH & SAFETY RISK ASSESSMENT / ACTION PLAN					Prepared by: JJD		
Activity / Element	Potential Hazard	People at Risk			Risk Rating		Control Measures Required During Site Work	Action Required at Design Stage	
		Wkr	Vis	Pub	Sev	Freq			O/A
Demolition / dismantling / stripping out / structural alterations - concrete frame; - steel frame; - masonry / random rubble load bearing walls; - steel beams; - timber floors;	Live Services	√			M	L	M	Adequate method statement. Mark out the services on site and make services safe. Suitable equipment / training and safe system of work. Obtain Service Clearances.	Adequate survey. Provide adequate information noting any nature and location of known live services.
	Uncontrolled Collapse / Over loading	√		√	M	L	L	Adequate method statement – comply with the Struct. Eng's report. Suitable sequences of work. Adequate protection /temporary support to retained structure and adjoining properties where necessary. Site fencing to cordon off site from public areas – including safety buffer zone.	Adequate survey. Provide structural report noting principles of structural stability, demolition methodology and any special hazards inherent in the existing construction or adjoining properties. Obtain demolition permit from Building Control.
	Falls from height	√			H	M	M	Adequate method statement. Suitable equipment/training and safe system of work including use of scaffolds, etc., where possible.	Avoid unnecessary demolition and the specification of complex or hazardous demolition sequences.
	Hazardous Materials / Substances	√			M	L	L	Adequate method statement. Adequate inspection/testing. Suitable equipment/training and safe system of work.	Adequate survey/testing. Provide adequate information noting any hazardous material/substances.
	Work with Asbestos	√			L	L	L	No asbestos on site. However, should any asbestos be encountered Client to engage a Licensed contractor. Adequate method statement adopting safe systems of work and site controls complying with asbestos Regs. Statutory notification.	Client to provide adequate information at tender stage. Adequate investigation/ testing (by specialist engaged by Client.
	Dust	P	P		M	L	M	Adequate method statement. Adequate site controls.	Specify any special requirements.
	Noise / Vibrations	P	P		M	L	M	Adopt low noise techniques/plant where reasonably practicable. Adequate method statement / site controls.	Consider existing / surrounding premises and their occupants. Specify any noise or vibration restrictions.
	Fire / Explosion	P			L	L	L	Adequate method statement. Adequate site controls.	Identify any record presence of any live gas/pipes, fuel tanks/supplies etc. Provide adequate tender information.

Project Title		HEALTH & SAFETY RISK ASSESSMENT / ACTION PLAN						Sheet No. 2	
DEMOLITION OF THE OLD AIRPORT TERMINAL BUILDING.		CIVIL & STRUCTURAL ENGINEERS						Date: 20 March 2013	
								Prepared by: JJD	
Activity / Element	Potential Hazard	People at Risk			Risk Rating			Control Measures Required During Site Work	Action Required at Design Stage
		Wkr	Vis	Pub	Sev	Freq	O/A		
Debris falling onto public areas.	Hit by debris.	√	√	√	M	L	M	Provide debris netting and erect fencing around the perimeter of building to be demolished.	Consider scaffolding protection around the building in the method statement.
Construction traffic accessing the site.	Traffic accident / injury to pedestrians.		√	√	M	L	M	Provide traffic management arrangement – allow for congested pedestrian and vehicular traffic on the adjacent public highway, Winston Churchill Avenue.	Highlight to the contractor the hazards in the structural report.
Damage / Injury to public on adjacent highway and walkway.	General injury.		√	√	M	L	M	Implement exclusion zone and provide continuous and interrupted supervision. Consider traffic management arrangements during demolition works adjacent to the highway i.e. divert traffic and pedestrians during critical demolition works. Consider carrying out critical demolition works at night time when there is less traffic.	Highlight to the contractor the hazards in the structural report and recommend stringent implementation of the exclusion zones and traffic management arrangements.
Damage to adjacent structures.	Damage.	√	√	√	M	L	M	Protect and separate existing structures from the demolition works.	Carry out survey of surrounding area. Highlight adjacent structures in the structural demolition report and include means of separating existing structures from the demolition by manual methods.
Debris (FOD) blown onto airfield.	Aeronautical incident.	√	√	√	M	L	M	Adequate method statement. Adequate site controls. Install boundary fence before starting works. Carry out most of the soft strip works within the enclosed building. Avoid external works in high winds.	Specify any special requirements.

Night time lighting adjacent to airfield.	Aeronautical incident.	√	√	√	M	L	M	Adequate method statement. Adequate site controls. Use directional lights as approved by Air Traffic Control.	Specify any special requirements.
Ponding water attracting birds – aeronautical hazard.	Aeronautical incident.	√	√	√	M	L	M	Adequate method statement. Adequate site controls. Avoid the creation of ponds on site and prevent litter accumulating.	Specify any special requirements.
Notes		Key: √ - definitely at risk P - possibly at risk		Key: H - high M - medium L - low		Notes			

APPENDIX C

DEMOLITION PLANT – DATA SHEET