APPLICATION NO:

CON/2001/3577

LOCATION:
Land adjacent to SW of Junction 8/9 M4, Maidenhead .

APPLICANT:
Granada Hospitality Ltd And Boulevard Land Ltd C/O FPD Savills

PROPOSAL:
Consultation from Royal Borough of Windsor & Maidenhead on outline aplication for motorway service area incorporating car,coach and HGV parking, fuel filling station, amenity building, lodge & picnic area.

EARLIEST DATE FOR DECISION: **06/04/2001**

APPLICATION WILL HAVE EXPIRED ON:
13/04/2001

CASE OFFICER: **Nicola Lake**

1395

D1

Tel: (0118) 974 6481 (Direct Line)
E-mail: Nicola.Lake@wokingham.gov.uk
Date: 19 June 2001
My ref: NL/CON/2001/3577
Your ref:

Environmental Services Department
Planning Services
P.O. Box 157
Shute End, Wokingham
Berkshire RG40 1WR
Tel: (0118) 974 6000
Fax: (0118) 974 6484
Minicom No: (0118) 974 6991
DX: 33506 – Wokingham

Mr K Roughan
Development Control Unit North.
The Royal Borough of Windsor and Maidenhead
Aston House
York Road
Maidenhead
Berkshire
SL6 1PS

Dear Mr Roughan,

CONSULTATION FROM THE ROYAL BOROUGH OF WINDSOR AND MAIDENHEAD ON OUTLINE APPLICATION FOR MOTORWAY SERVICE AREA INCORPORATING CAR, COACH AND HGV PARKING, FUEL FILLING STATION, AMENITY BUILDING, LODGE AND PICNIC AREA.

Thank you for your letter of the 13 March 2001, regarding the above stated development. I would like to take this opportunity to apologise for the delay in replying to your enquiry.

I write to confirm that Wokingham District Council has no objection to the proposed development, as it is considered that the distance of 14 mile, between the application site and the District's boundary, would mean that the proposal would have no significant adverse impact upon the character, amenity, appearance or highway safety of the district.

I hope this information is of assistance to you.

Yours sincerely,

JOHN MITCHELL.
Development Control Manager.

WORK SHEET FOR : Nicola Lake

Application Number : CON/2001/3577

Applicant : Granada Hospitality Ltd And Boulevard Land Ltd C/O FPD Savills.

Location : Land adjacent to SW of Junction 8/9, M4, Maidenhead, .

Proposal : Consultation from Royal Borough of Windsor & Maidenhead on outline aplication for motorway service area incorporating car,coach and HGV parking, fuel filling station, amenity building, lodge & picnic area.

Site Notice Displayed ? :

YES	NO	DATE

Date of Neighbour Notifications : .....

Date of Site Visit : .....

Date Registered : 16/03/2001

Earliest Date for Decision : 06/04/2001

Latest Consultation Date/Site Notice Expiry Date : 06/04/2001

This application will have expired on: 13/04/2001. You need to make a decision 1 day prior to this date for this application to count as determined in less than 8 weeks.

Consultation Responses :

Planning Issues :

Application Number: CON/2001/3577

Appraisal :

Recomendation : Approval: ☐ **Refusal:** ☐
(tick appropriate box)

Application Number CON/2001/3577
Conditions/Reasons for Refusal

No	Std Con	Std Reas	Non Std Conditions / Reasons for Refusal

RECORD OF SITE VISIT

SITE ADDRESS: Land adjacent to SW of Junction 8/9 M4 Maidenhead .

APPLICATION NUMBER: CON/2001/3577

OFFICER: Nicola Lake

DATE OF SITE VISIT:.....

1 SITE/STATUTORY NOTICE DISPLAYED ?

2. DESCRIPTION OF SURROUNDINGS

3. DESCRIPTION OF SITE/BUILDING

4. RELATIONSHIP TO ADJOINING PROPERTIES

5. SITE CONSTRAINTS

TREES

ACCESS/PARKING

LEVELS

BOUNDARY TREATMENT

OTHERS

3577

HIGHWAYS CONSULTATION SHEET

From: Nicola Lake **Date:** 22 March 2001

Application Number: CON/2001/3577

Proposal: Consultation from Royal Borough of Windsor & Maidenhead on outline aplication for motorway service area incorporating car,coach and HGV parking, fuel filling station, amenity building, lodge & picnic area.

Parish:

Site Address:
Land adjacent to SW of Junction 8/9, M4, Maidenhead, .

Applicant:
Granada Hospitality Ltd And Boulevard Land Ltd C/O FPD Savills.

Your observations are required in respect of this application within **7 days** of the above date.

✓ below as applicable;

1) ☐ Recommend refusal for the reason(s) **stated below**;
2) ☐ Recommend approval but with condition(s) & reason(s) **stated below**;
3) ☐ Recommend approval with **no** condition(s) or reason(s).

THERE WILL BE NO NOTICEABLE IMPACT ON TRAFFIC WITHIN THE ADMINISTRATIVE BOUNDARY OF WOKINGHAM DISTRICT.

25TH JUNE 01

Signed: _____ **Print name:** _____

ROYAL BOROUGH OF WINDSOR AND MAIDENHEAD

Directorate of Planning and Environment

Development Control Unit North

CASE OFFICER / DIRECT LINE
Consultants

13 March 2001

Wokingham District Council (Planning)
Council Offices
Shute End
Wokingham
Berkshire
RG40 1WR

Dear Sir/Madam,

TOWN AND COUNTRY PLANNING ACT 1990
SPHERES OF MUTUAL INTEREST

Appn. Date	:	05.03.2001	Appn No: 01/36785
Type	:	Outline	
Proposal	:	Motorway Service Area incorporating car coach and HGV parking, fuel filling station, amenity building, lodge and picnic area	
Location	:	Land South Of Junction 8/9 Holyport M4 Maidenhead Berkshire SL6 2HY	

I enclose herewith a copy of the above-mentioned planning application and would pleased to receive any representations you may wish to make as soon as possible. If I do not hear from you within the next 28 days I will assume you have no objections to make on this application.

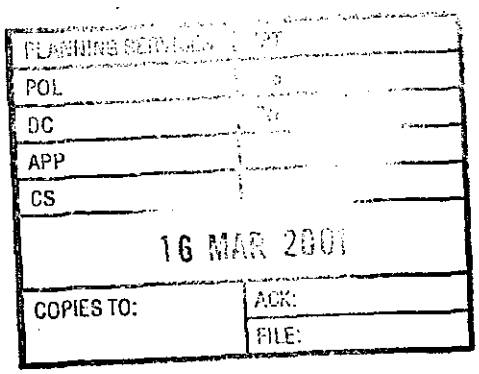
If you wish to discuss this application, please do not hesitate to contact the Case Officer mentioned above.

Would you please return the enclosures with your reply.

Yours faithfully,

Development Control Manager

Encl.



INVESTOR IN PEOPLE

Michael Coughlin: Director of Planning and Environment
Aston House, York Road, Maidenhead, Berks, SL6 1PS.
Tel: (01628) 798888 Fax: (01628) 796438 DX 6422 - Maidenhead 1
Callers are requested to use direct lines whenever quoted.

ROYAL BOROUGH OF WINDSOR AND MAIDENHEAD

PLANNING APPLICATION

PART 1

APPLICATION FOR PERMISSION TO CARRY OUT DEVELOPMENT – TOWN AND COUNTRY PLANNING ACTS.

Please answer ALL QUESTIONS in BLOCK LETTERS. If a question is not applicable, answer N/A in space. Please submit FIVE copies of this form and plans to:

THE DEVELOPMENT CONTROL MANAGER
ASTON HOUSE,
YORK ROAD,
MAIDENHEAD,
BERKSHIRE. SL6 1PS
Tel: **01628 798888**
Fax: **01628 796438**

PLEASE READ "NOTES TO HELP APPLICANTS" BEFORE COMPLETING THIS FORM

For office use only

1.	APPLICANT'S NAME ADDRESS POSTCODE	GRANADA HOSPITALITY LTD & BOULEVARD LAND LTD PO BOX 218, TODDINGTON BEDFORDSHIRE LU5 6QG PHONE
2. If the applicant has an agent, all correspondence will be sent to the agent.	AGENT'S NAME ADDRESS POSTCODE	FPDSAVILLS WESSEX HOUSE WIMBORNE, DORSET BH21 1PB PHONE 01202 856900
3. Show the site outlined in RED on the plans. Other land in the applicant's ownership or control must be shown outlined in BLUE.	SITE ADDRESS OR LOCATION	LAND ADJACENT TO THE SOUTH WEST OF JUNCTION 8/9 M4, MAIDENHEAD, BERKSHIRE
4. WHAT IS THE APPLICATION FOR? Give brief details and state for what purpose the site and any buildings will be used.	PROPOSED DEVELOPMENT	MOTORWAY SERVICE AREA INCORPORATING CAR, COACH AND HGV PARKING, FUEL FILLING STATION, AMENITY BUILDING, LODGE AND PICNIC AREA
5. Give the area in hectares or part of a hectare.	AREA OF SITE	13 HECTARES
6. State the applicant's interest in the land. E.g. owner, prospective purchaser, lessee.	OWNERSHIP	PROSPECTIVE PURCHASER
7. List all the plans and drawings submitted with the application.	PLANS/DRAWINGS	LOCATION PLAN. SITE LAYOUT DRAWING NO. 47501-019/1011 rev b

8. DOES THE APPLICATION INVOLVE ANY OF THE FOLLOWING? *Tick the box(es)*

CHANGE OF USE	✓	REDEVELOPMENT	
ERECTION OF NEW BUILDING	✓	ALTERATION or EXTENSION	

9. WHAT TYPE OF APPLICATION IS THIS? *(Tick one box only)*

OUTLINE PERMISSION	✓	→ See question 10
FULL PERMISSION		
APPROVAL OF DETAILS/RESERVED MATTERS		→ State relevant outline permission number
TEMPORARY PERMISSION		→ State period required
RELAXATION OF CONDITIONS		→ State relevant permission no → Conditions to be relaxed

10. IF THIS IS AN OUTLINE APPLICATION, which details, if any do you wish to be considered as part of this application? If none, state none. *(Tick the box(es)*

NONE		SITING	
EXTERNAL APPEARANCE		DESIGN	
MEANS OF ACCESS	✓	LANDSCAPING	

01/36785

11. WHAT IS THE EXISTING USE OF THE LAND/BUILDING? E.g. residential, industrial etc. If the site is vacant, say so, and also state its previous use and when that ceased.
AGRICULTURAL

12. DOES A PUBLIC RIGHT OF WAY ~~CROSS~~ ABUT THE SITE OR THE PROPOSED ACCESS? YES/~~NO~~ If YES, show existing route(s) and any proposed alterations on the plans.

13. ARE THERE ANY TREES ON THE SITE? YES/~~NO~~ If YES, show their positions, spread and species on the plans and which, if any, are to be felled.
IF YES, ARE ANY TO BE FELLED? ~~YES~~/NO

14. STATE EXTERNAL MATERIALS TO BE USED
TO BE AGREED

15. HOW WILL THE SITE BE ENCLOSED? Say whether walls, fences or hedges, and give height, colour and materials. If the site is divided into plots, say how each is to be enclosed.
TO BE AGREED

16. HOW WILL SURFACE WATER BE DISPOSED OF?
VIA BALANCING POND TO ADJACENT STREAM

17. HOW WILL FOUL SEWAGE BE DISPOSED OF?
To existing system? If NO Please give details YES/~~NO~~

18. WHAT ARE THE ACCESS ARRANGEMENTS? Give details of pedestrian and vehicular accesses
(a) As they exist
(a) AGRICULTURAL ACCESS IS PRESENTLY FROM THRIFT LANE AND STUART GREEN
(b) As they are proposed
(b) NEW VEHICULAR ACCESS ROAD TO BE CONSTRUCTED FROM THE EXISTING ELEVATED ROUNDABOUT AT JUNCTION 8/9 OF THE M4 USING DEDICATED SLIP ROADS

19. HAS PROVISION BEEN MADE FOR THE DISABLED? See notes for applicants YES/~~NO~~

20. IF THIS PROPOSAL INVOLVES RESIDENTIAL DEVELOPMENT OR THE LOSS OF RESIDENTIAL UNITS, COMPLETE THE FOLLOWING TABLE

	NO. OF DWELLINGS/HABITABLE ROOMS		
	PROPOSED Dwellings Habitable	TO BE RETAINED Dwellings Habitable	TO BE LOST Dwellings Habitable
HOUSE	/	/	/
BUNGALOW	/	/	/
FLAT/ MAISONETTE	/	/	/
OTHER	/	/	/

21. DOES THE PROPOSAL INVOLVE ANY NON-RESIDENTIAL BUILDING OR USE? YES/~~NO~~ If YES complete part 2 of the form.

22. DOES THE PROPOSAL INVOLVE THE WINNING, WORKING OR PROCESSING OF MINERALS, THE DISPOSAL OF MINERAL WASTE, OR THE DEPOSIT OR PROCESSING OF REFUSE AND WASTE MATERIALS? ~~YES~~/NO If YES please ask for and complete part 3 of the form.

23. STATE THE FEE ENCLOSED WITH THIS APPLICATION. The current scale of fees is enclosed. If you believe a reduced fee or fee is payable, say why.
£4,750.00

I hereby apply for permission in respect of the particulars described above and in the attached plans and drawings. If planning permission is granted the development must be carried out strictly in accordance with the approved plans. Failure to do so could result in enforcement action being taken. Permission under the Town and Country Planning Acts does not obviate the possible need to apply for Building Regulations approval.

SIGNED P. Travers ON BEHALF OF GRANADA HOSPITALITY LTD & BOULEVARD LAND LTD DATE 2-3-01

Before submitting the application check that it is complete, that all questions have been answered and that the site boundary and the new work are clearly shown in red on the plans. AN INCORRECT APPLICATION MAY BE RETURNED. Every application must be accompanied by the appropriate Section 6 Certificate. See NOTES TO HELP APPLICANTS.

PLANNING APPLICATION 01/36785 PART 2

This part of the form need only be completed if the application involves non residential development. Please answer all the questions in print or block letters. If the answer is not applicable, write N/A in the space. You may wish to amplify your answers in a covering letter.

24. STATE THE GROSS FLOOR SPACE IN SQUARE METRES (by external measurement) OF ALL BUILDINGS TO WHICH THIS APPLICATION REFERS.

USE CLASS		EXISTING FLOORSPACE		PROPOSED ADDITIONAL FLOORSPACE CREATED BY	
		RETAINED EXISTING USE	LOST BY CHANGE OF USE OR DEMOLITION	NEW BUILDING	CHANGE OF USE
A1	SHOPS				
A2	FINANCIAL AND PROFESSIONAL SERVICES			1915	
A3	FOOD AND DRINK				
B1(a)	OFFICE (other than A2)				
B1(b)	RESEARCH AND DEVELOPMENT				
B1(c)	LIGHT INDUSTRIAL				
B2	GENERAL INDUSTRIAL				
B3-7	SPECIAL INDUSTRIAL				
B8	STORAGE OR DISTRIBUTION				
C1	HOTELS AND HOSTELS			1160	
C2	RESIDENTIAL INSTITUTIONS				
D1	NON-RESIDENTIAL INSTITUTIONS				
D2	ASSEMBLY AND LEISURE				
OTHER	Please specify FUEL FILLING STATION			272	
	Please specify				
	TOTAL			3347	

25. IF A C1 or C2 USE IS PROPOSED, PLEASE STATE NUMBER OF BED SPACES. 100

26. WHAT PROVISION IS BEING MADE FOR PARKING?

	CARS		LORRIES	
EXISTING			COACHES	9
PROPOSED	CARS	347	HGV	20
TOTAL		347		29

27. DESCRIBE THE ACTIVITY OR PROCESSES TO BE CARRIED ON. Provide details of any equipment, plant or machinery to be installed and any end products. You may wish to amplify your answers in a covering letter.

MOTORWAY SERVICE AREA

28. WHO WILL OCCUPY THE PREMISES?

(a) Give the name and current operating address of the proposed occupier.

GRANADA HOSPITALITY LTD
(a) PO BOX 218, TODDINGTON, BEDFORDSHIRE LU5 6QG

(b) Will these present premises be vacated?

(b) NO (NEW MSA)

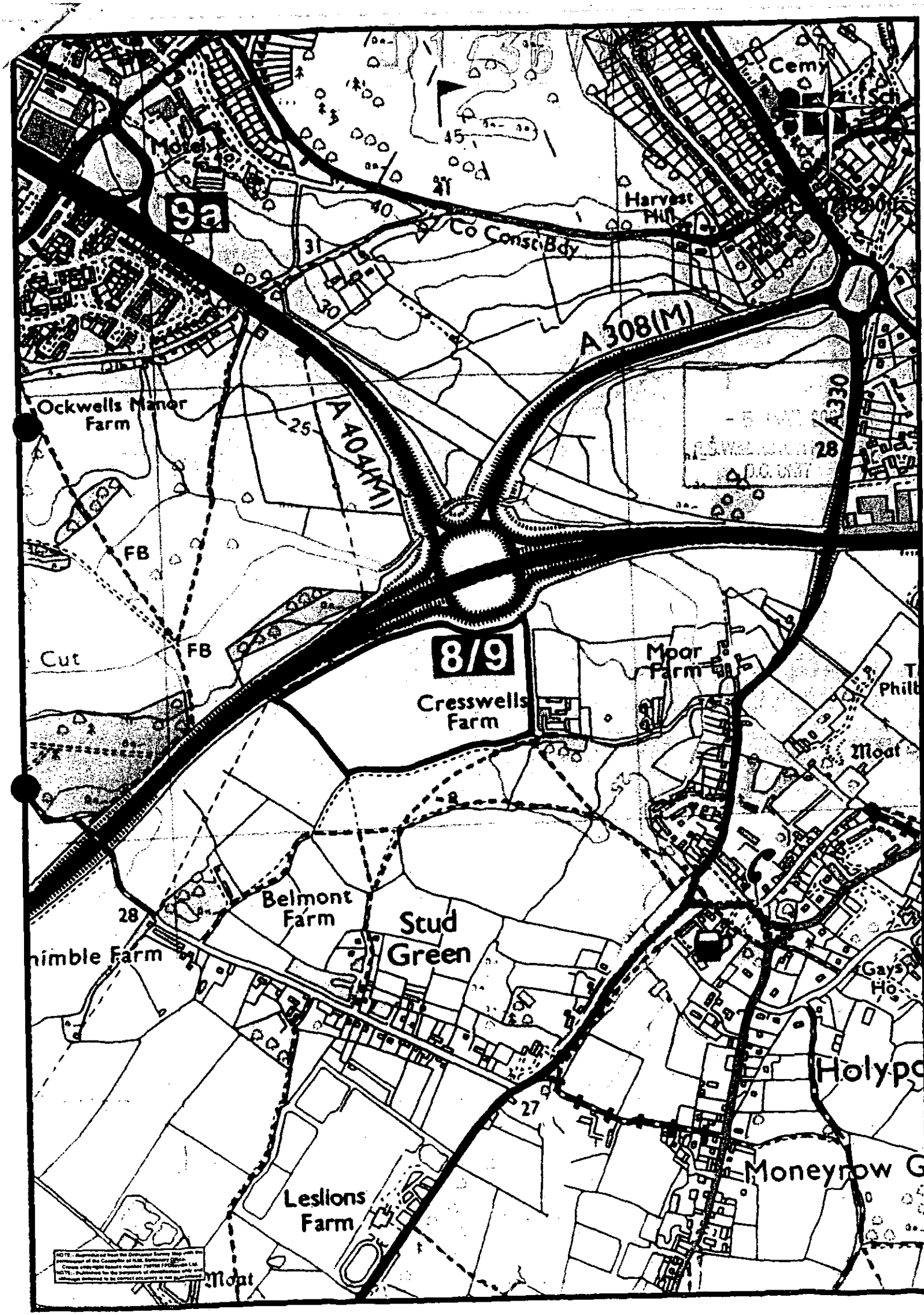
29. IF KNOWN, HOW MANY PEOPLE ARE LIKELY TO BE EMPLOYED ON SITE AFTER COMPLETION OF THE DEVELOPMENT?

EXISTING STAFF	TRANSFERRED STAFF	NEW STAFF	TOTAL
APPROX FULL-TIME EQUIVALENT			100-130

30. DOES THE PROPOSAL INVOLVE THE USE OR STORAGE OF ANY OF THE HAZARDOUS SUBSTANCES LISTED IN THE NOTES? ~~YES~~/NO

If YES, state which material, the quantity and method of storage.

Before submitting the application check that it is complete, that all questions have been answered and that the site boundary and the new work are clearly shown in red on the plans. AN INCORRECT APPLICATION MAY BE RETURNED. Every application must be accompanied by the appropriate Section 66 certificate. See NOTES TO HELP APPLICANTS.


Cemy
Motel
9a
Harvest Hill
Co Const Bdy
A308(M)
A330
Ockwells Manor Farm
A404(M)
FB
FB
Cut
8/9
Cresswells Farm
Moar Farm
Moat
Belmont Farm
Stud Green
himble Farm
Gays Ho
Holypo
Moneyrow G
Leslions Farm
Moat

Wokingham District Council Environmental Services Department, PO Box 157, Shute End, Wokingham
Berks, RG40 1WR

FAX

Date: 20 June 2001

Number of pages including cover sheet: 2.

To:
Mr. K. Roughan.

Phone:

Fax phone: 01628 796054

CC:

From:
Miss. N. Lake.

Phone: 0118 974 6481.

Fax phone: 0118 9746484

REMARKS: ☐ Urgent ☐ For your review ☐ Reply ASAP ☐ Please comment

Proposed Motorway Service Station, Junction 8/9.
M4.

* * * COMMUNICATION RESULT REPORT (20.JUN.2001 8:11) * * *

TTI WDC PLAN&TRANSPORT

FILE	MODE	OPTION	ADDRESS (GROUP)	RESULT	PAGE
010	MEMORY TX		901628796054	OK	P. 2/2

REASON FOR ERROR
E-1) HANG UP OR LINE FAIL
E-2) BUSY
E-3) NO ANSWER
E-4) NO FACSIMILE CONNECTION

WOKINGHAM DISTRICT COUNCIL

MEMORANDUM

From: Suzanne McLaughlin
Environmental Health

My Ref: SEM/20010048

To: Nicola Lake
Planning

Your Ref: CON/2001/3577

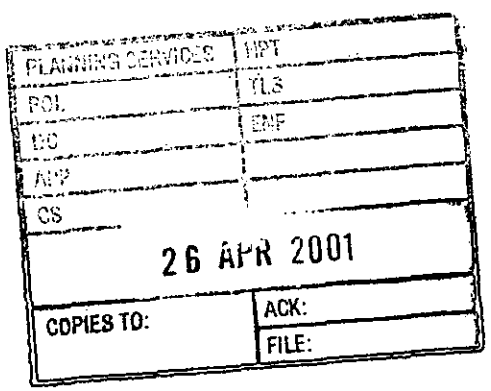
Date: 25 April 2001

Consultation from Royal Borough of Windsor and Maidenhead on outline application for motorway service area incorporating car, coach and HGV parking, fuel filling station, amenity building, lodge and picnic area.

Land adjacent to SW of Junction 8/9, M4, Maidenhead.

I have reviewed the Environmental Health implications of this application and have no objections or comments to make.

SE McLaughlin



Memo

To: Nicola Lake

From: Conrad Moore

Date: 04/04/01

Re: **Policy Comments upon CON/2001/3577**

RBW&M will need to assess whether this development is sustainable in terms of the capacity of the County to accommodate further growth and change. This means protecting and where possible enhancing the overall quality of Berkshires environment, social and economic needs and aspirations. As such Adopted Berkshire Structure Plan Policies OS1, LD3, LD4, and LD5 could apply.

The site is within the countryside in the Metropolitan Green Belt. As such Adopted Berkshire Structure Plan Policies C3 and C4 apply. PPG2 states that the aim of Green Belt Policy is the permanence of open character (and note that this does not occur in general countryside policies). Note the requirements of PPG 2 paragraphs 1.4, 1.5 and 1.6. These are matters for RBW&M to consider. However, this development site is unlikely to specifically impact the Metropolitan Green Belt in this District.

There are no obvious landscape and ecological implications for this District.

Views and comment should be sought from Tom Callaghan on latest MSA guidance and requirements as well as potential traffic implications for this District. On a general note the EIA concentrates on immediate locality implications rather than potential wider impacts. This needs to be checked by the highway team. RBW&M will also need to weigh safety considerations for tired drivers against the potential proposals effect of encouraging the use of the private car by increasing facilities available to private car drivers.

Views and comment should be sought from Suzanne McLaughlin on potential air quality issues for this District (that may arise from the traffic implications for example). The current status of Air Quality Management Areas (AQMA's) along the M4 Corridor in this District and potential implications for them should be investigated.

This application (in the light of any potential implications for the District) may need to go to Planning Obligations Group for consideration. As such Adopted Berkshire Structure Plan Policies LD6 and LD8 could apply. Obligations on highway aspects and alternatives to the private car could be considered for example.

On a strategic level will the development proposed increase the perception of East Berkshire - being more urban in appearance, character and feel; as you travel along the M4? The need for the MSA and change in character (with the MSA potential urbanising influences such as activity, lighting and built form) will need to be weighed carefully.

Subject to the above issues being looked at and resolved, there is no specific policy objection from this District.

Conrad Moore.
Senior Planning Officer.
Development Planning Team.

Seen

WOKINGHAM D.C. DEVELOPMENT CONTROL

Start date:	16 MARCH 2001
Officer: NL	Application No. CON/2001/3577

Map No. ..... Site .....
Easting: ..... Flood Pln .....
Northing: ..... Mineral .....

Level: ☑ **Sub Committee** ☑ **Delegated** ☐ **Sec. State**
☐ **Incorrect Fee** ☐ **Invalid** ☐ **PD**

Description:
(CON) Consultation from Royal Borough of Windsor & Maidenhead on outline application for motorway Service area incorporating car, coach & HGV parking, fuel filling station, amenity building, lodge & picnic area

Location: land S of junction 8/9 Holyport M4

Parish: Maidenhead Ward: Mrs Drake

Applicant: Granada Hospitality Ltd & Boulevard Land Ltd

Fee Received ✓ Required ..... Additional ..... Refund .....

Enforcement Section to be notified ☐ tick if required

Additional information required for validation

		Reason	Requested	Received
1	1:2500 OS location plan showing property edged in blue/red			
2	1:500 block plan showing existing & proposed dev. + adj. Properties			
3	Forms unsigned			
4	Correct S 66 certificate			
5	Elevation plans			
6	Floor plans			
7	Metric scale disclaimer			
8	Encroachment letter			
9	Miscellaneous			

APPLN NO. _____

ACTION REQUIRED BY DEVELOPMENT CONTROL

Conservation Area .....

Listed Building 1 2 2*

Advertisement Required .....

Date Site Notice Sent : ..... Parish Council Informed - YES / NO

INTERNAL CONSULTATIONS

Building Control	.....
Landscape	.....
Trees	.....
Conservation Officer	.....
Environmental Health	3/4
Housing	.....
Leisure & Cultural services	.....
Public Rights of Way	.....
Property	.....
District Secretary (only if called in by SOS)	.....
Policy & Plans	3/4
Strategic Planning (JSPU)	.....
Minerals (INTERNAL)	.....
Archaeological Site (BABTIE)	: .....
Education	.....
Social Services	.....
Highways	3/4

EXTERNAL CONSULTATIONS

Adjacent D P A	3/4
Adjacent Parish Hurst	.....
Southern Electricity Board	.....
British Gas	.....
PSA Oil Pipeline	.....
Transco	: .....
Environment Agency	.....
Rail Track	.....
Police Arch. Liaison Officer	.....

HERITAGE BODIES

The Georgian Group	.....
Ancient Monuments Society	.....
Council for British Arch.	.....
RCHME	.....
Telecommunications (NRPB)	: .....
Sport England	: .....

OTHERS:

.....

.....

..... No pre-apps.

NEIGHBOURS:

..... N/A .....

ROYAL BOROUGH OF WINDSOR AND MAIDENHEAD

Directorate of Planning and Environment

Development Control Unit North

CASE OFFICER / DIRECT LINE
Consultants

13 March 2001

Wokingham District Council (Planning)
Council Offices
Shute End
Wokingham
Berkshire
RG40 1WR

Dear Sir/Madam,

TOWN AND COUNTRY PLANNING ACT 1990
SPHERES OF MUTUAL INTEREST

Appn. Date	:	05.03.2001	Appn No: 01/36785
Type	:	Outline	
Proposal	:	Motorway Service Area incorporating car coach and HGV parking, fuel filling station, amenity building, lodge and picnic area	
Location	:	Land South Of Junction 8/9 Holyport M4 Maidenhead Berkshire SL6 2HY	

I enclose herewith a copy of the above-mentioned planning application and would pleased to receive any representations you may wish to make as soon as possible. If I do not hear from you within the next 28 days I will assume you have no objections to make on this application.

If you wish to discuss this application, please do not hesitate to contact the Case Officer mentioned above.

Would you please return the enclosures with your reply.

Yours faithfully,

Development Control Manager

Encl.

PLANNING SERVICES DEPT
POL
DC
APP
CS
16 MAR 2001
COPIES TO:
ACK:
FILE:

INVESTOR IN PEOPLE

Michael Coughlin: Director of Planning and Environment
Aston House, York Road, Maidenhead, Berks, SL6 1PS.
Tel: (01628) 798888 Fax: (01628) 796438 DX 6422 - Maidenhead 1
Callers are requested to use direct lines whenever quoted.

01/00705

ROYAL BOROUGH OF WINDSOR AND MAIDENHEAD

PLANNING APPLICATION

PART 1

APPLICATION FOR PERMISSION TO CARRY OUT DEVELOPMENT – TOWN AND COUNTRY PLANNING ACTS.

Please answer ALL QUESTIONS in BLOCK LETTERS. If a question is not applicable, answer N/A in space. Please submit FIVE copies of this form and plans to:

THE DEVELOPMENT CONTROL MANAGER
ASTON HOUSE,
YORK ROAD,
MAIDENHEAD,
BERKSHIRE. SL6 1PS
Tel: **01628 798888**
Fax: **01628 796438**

PLEASE READ "NOTES TO HELP APPLICANTS" BEFORE COMPLETING THIS FORM

For office use only

1.	**APPLICANT'S NAME**	GRANADA HOSPITALITY LTD & BOULEVARD LAND LTD
	ADDRESS	PO BOX 218, TODDINGTON BEDFORDSHIRE
	POSTCODE	LU5 6QG **PHONE**
2. If the applicant has an agent, all correspondence will be sent to the agent.	**AGENT'S NAME**	FPDSAVILLS
	ADDRESS	WESSEX HOUSE WIMBORNE, DORSET
	POSTCODE	BH21 1PB **PHONE** 01202 856900
3. Show the site outlined in RED on the plans. Other land in the applicant's ownership or control must be shown outlined in BLUE.	**SITE ADDRESS OR LOCATION**	LAND ADJACENT TO THE SOUTH WEST OF JUNCTION 8/9 M4, MAIDENHEAD, BERKSHIRE
4. WHAT IS THE APPLICATION FOR? Give brief details and state for what purpose the site and any buildings will be used.	**PROPOSED DEVELOPMENT**	MOTORWAY SERVICE AREA INCORPORATING CAR, COACH AND HGV PARKING, FUEL FILLING STATION, AMENITY BUILDING, LODGE AND PICNIC AREA
5. Give the area in hectares or part of a hectare.	**AREA OF SITE**	13 HECTARES
6. State the applicant's interest in the land. E.g. owner, prospective purchaser, lessee.	**OWNERSHIP**	PROSPECTIVE PURCHASER
7. List all the plans and drawings submitted with the application.	**PLANS/DRAWINGS**	LOCATION PLAN. SITE LAYOUT DRAWING NO. 47501-019/1011 rev b

8. DOES THE APPLICATION INVOLVE ANY OF THE FOLLOWING? *Tick the box(es)*

CHANGE OF USE	✓	**REDEVELOPMENT**	
ERECTION OF NEW BUILDING	✓	**ALTERATION or EXTENSION**	

9. WHAT TYPE OF APPLICATION IS THIS? *(Tick one box only)*

OUTLINE PERMISSION	✓	→ See question 10	
FULL PERMISSION			
APPROVAL OF DETAILS/RESERVED MATTERS		→ State relevant outline permission number	
TEMPORARY PERMISSION		→ State period required	
RELAXATION OF CONDITIONS		→ State relevant permission no → Conditions to be relaxed	

10. IF THIS IS AN OUTLINE APPLICATION, which details, if any do you wish to be considered as part of this application? If none, state none. *(Tick the box(es)*

NONE		**SITING**	
EXTERNAL APPEARANCE		**DESIGN**	
MEANS OF ACCESS	✓	**LANDSCAPING**	

11. WHAT IS THE EXISTING USE OF THE LAND/BUILDING? E.g. residential, industrial etc. If the site is vacant, say so, and also state its previous use and when that ceased.
AGRICULTURAL

01/36785

12. DOES A PUBLIC RIGHT OF WAY ~~CROSS~~ ABUT THE SITE OR THE PROPOSED ACCESS? YES/~~NO~~ If YES, show existing route(s) and any proposed alterations on the plans.

13. ARE THERE ANY TREES ON THE SITE? YES/~~NO~~
IF YES, ARE ANY TO BE FELLED? ~~YES~~/NO
If YES, show their positions, spread and species on the plans and which, if any, are to be felled.

14. STATE EXTERNAL MATERIALS TO BE USED
TO BE AGREED

15. HOW WILL THE SITE BE ENCLOSED? Say whether walls, fences or hedges, and give height, colour and materials. If the site is divided into plots, say how each is to be enclosed.
TO BE AGREED

16. HOW WILL SURFACE WATER BE DISPOSED OF?
VIA BALANCING POND TO ADJACENT STREAM

17. HOW WILL FOUL SEWAGE BE DISPOSED OF?
To existing system? YES/~~NO~~
If NO Please give details

18. WHAT ARE THE ACCESS ARRANGEMENTS?
Give details of pedestrian and vehicular accesses
(a) As they exist
(a) AGRICULTURAL ACCESS IS PRESENTLY FROM THRIFT LANE AND STUART GREEN

(b) As they are proposed
(b) NEW VEHICULAR ACCESS ROAD TO BE CONSTRUCTE FROM THE EXISTING ELEVATED ROUNDABOUT AT JUNCTION 8/9 OF THE M4 USING DEDICATED SLIP ROADS

19. HAS PROVISION BEEN MADE FOR THE DISABLED? See notes for applicants YES/~~NO~~

20. IF THIS PROPOSAL INVOLVES RESIDENTIAL DEVELOPMENT OR THE LOSS OF RESIDENTIAL UNITS, COMPLETE THE FOLLOWING TABLE

NO. OF DWELLINGS/HABITABLE ROOMS			
	PROPOSED Dwellings Habitable	TO BE RETAINED Dwellings Habitable	TO BE LOST Dwellings Habitable
HOUSE	/	/	/
BUNGALOW	/	/	/
FLAT/ MAISONETTE	/	/	/
OTHER	/	/	/

21. DOES THE PROPOSAL INVOLVE ANY NON-RESIDENTIAL BUILDING OR USE? YES/~~NO~~ If YES complete part 2 of the form.

22. DOES THE PROPOSAL INVOLVE THE WINNING, WORKING OR PROCESSING OF MINERALS, THE DISPOSAL OF MINERAL WASTE, OR THE DEPOSIT OR PROCESSING OF REFUSE AND WASTE MATERIALS? ~~YES~~/NO If YES please ask for and complete part 3 of the form.

23. STATE THE FEE ENCLOSED WITH THIS APPLICATION. The current scale of fees is enclosed. If you believe a reduced fee or fee is payable, say why.
£4,750.00

I hereby apply for permission in respect of the particulars described above and in the attached plans and drawings. If planning permission is granted, the development must be carried out strictly in accordance with the approved plans. Failure to do so could result in enforcement action being taken. Permission under the Town and Country Planning Acts does not obviate the possible need to apply for Building Regulations approval.

SIGNED ..... ON BEHALF OF GRANADA HOSPITALITY LTD & BOULEVARD LAND LTD DATE 2-3-01

Before submitting the application check that it is complete, that all questions have been answered and that the site boundary and the new work are clearly shown in red on the plans. AN INCORRECT APPLICATION MAY BE RETURNED. Every application must be accompanied by the appropriate Section 66 Certificate. See NOTES TO HELP APPLICANTS.

PLANNING APPLICATION 01/36785 PART 2

This part of the form need only be completed if the application involves non residential development. Please answer all the questions in print or block letters. If the answer is not applicable, write N/A in the space. You may wish to amplify your answers in a covering letter.

24. STATE THE GROSS FLOOR SPACE IN SQUARE METRES (by external measurement) OF ALL BUILDINGS TO WHICH THIS APPLICATION REFERS.

USE CLASS		EXISTING FLOORSPACE		PROPOSED ADDITIONAL FLOORSPACE CREATED BY	
		RETAINED EXISTING USE	LOST BY CHANGE OF USE OR DEMOLITION	NEW BUILDING	CHANGE OF USE
A1	SHOPS				
A2	FINANCIAL AND PROFESSIONAL SERVICES			1915	
A3	FOOD AND DRINK				
B1(a)	OFFICE (other than A2)				
B1(b)	RESEARCH AND DEVELOPMENT				
B1(c)	LIGHT INDUSTRIAL				
B2	GENERAL INDUSTRIAL				
B3-7	SPECIAL INDUSTRIAL				
B8	STORAGE OR DISTRIBUTION				
C1	HOTELS AND HOSTELS			1160	
C2	RESIDENTIAL INSTITUTIONS				
D1	NON-RESIDENTIAL INSTITUTIONS				
D2	ASSEMBLY AND LEISURE				
OTHER	Please specify FUEL FILLING STATION			272	
	Please specify				
	TOTAL			3347	

25. IF A C1 or C2 USE IS PROPOSED, PLEASE STATE NUMBER OF BED SPACES. 100

26. WHAT PROVISION IS BEING MADE FOR PARKING?

	CARS	LORRIES
EXISTING		COACHES 9
PROPOSED	CARS 347	HGV 20
TOTAL	347	29

27. DESCRIBE THE ACTIVITY OR PROCESSES TO BE CARRIED ON Provide details of any equipment, plant or machinery to be installed and any end products. You may wish to amplify your answers in a covering letter.

MOTORWAY SERVICE AREA

28. WHO WILL OCCUPY THE PREMISES?

(a) Give the name and current operating address of the proposed occupier.

GRANADA HOSPITALITY LTD
(a) PO BOX 218, TODDINGTON, BEDFORDSHIRE LU5 6QG

(b) Will these present premises be vacated?

(b) NO (NEW MSA)

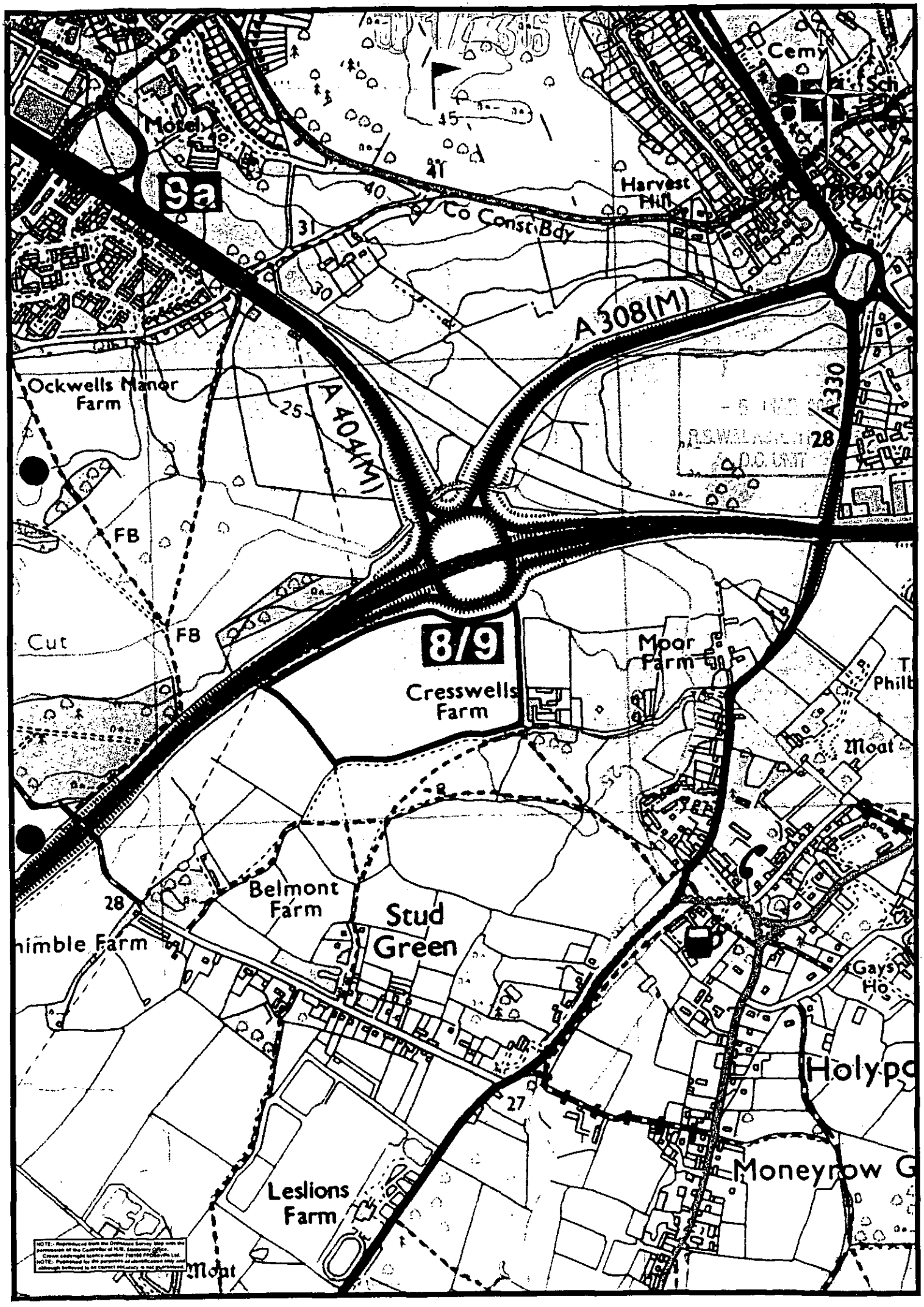
29. IF KNOWN, HOW MANY PEOPLE ARE LIKELY TO BE EMPLOYED ON SITE AFTER COMPLETION OF THE DEVELOPMENT?

EXISTING STAFF	TRANSFERRED STAFF	NEW STAFF	TOTAL
APPROX FULL-TIME EQUIVALENT			100-130

30. DOES THE PROPOSAL INVOLVE THE USE OR STORAGE OF ANY OF THE HAZARDOUS SUBSTANCES LISTED IN THE NOTES? ~~YES~~ NO

If YES, state which material, the quantity and method of storage.

Before submitting the application check that it is complete, that all questions have been answered and that the site boundary and the new work are clearly shown in red on the plans. AN INCORRECT APPLICATION MAY BE RETURNED. Every application must be accompanied by the appropriate Section 66 certificate. See NOTES TO HELP APPLICANTS.



Cemy
Sch
Motel
9a
41
40
Harvest Hill
Co Const Bdy
31
30
A 308(M)
Ockwells Manor Farm
25
A 404(M)
A330
28
FB
FB
Cut
8/9
Moor Farm
Cresswells Farm
Moat
Belmont Farm
28
Stud Green
himble Farm
Gays Ho
Holypo
27
Moneyrow G
Leslions Farm
Moat

01/36785

Environmental Statement

Proposed Westbound Motorway Service Area

Junction 8/9 • M4 • Maidenhead • Berkshire

BOULEVARD LAND LIMITED

Land and Property Development

Granada

FPDsavills

INTERNATIONAL PROPERTY CONSULTANTS

PLANNING

Environmental Statement

Professional Team

FPDSavills Planning

URS Thorburn Colquhoun

Matrix Partnership Ltd

Countryside Planning and Management

BOULEVARD LAND LIMITED

Land and Property Development

Granada

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NON-TECHNICAL SUMMARY

INTRODUCTION

1 An outline planning application has been submitted to The Royal Borough of Windsor and Maidenhead for a westbound Motorway Service Area (MSA) at Junction 8/9 of the M4, near Maidenhead.

2 The first section of this document is a summary, in non-technical language, of an assessment of the effects of the proposed scheme on the environment and the measures taken to reduce any adverse effects. These studies have been undertaken by a team of consultants, whose findings are set out in full in the subsequent sections of this Environmental Statement.

GOVERNMENT LEGISLATION

3 In 1992 the Government changed the legislation relating to the provision of Motorway Service Areas. This enabled MSAs to be initiated by the private sector, whereas previously they could only be promoted by the Department of Transport. Current Government policy broadly seeks provision of an MSA approximately every 30 miles (48 km) in order to provide drivers with adequate opportunities to stop and rest. More frequent spacing is acceptable in certain circumstances, listed in the Government guidance.

4 Compared with the minimum advisory spacing of 30 miles (48 km), this section of the westbound M4/M25 motorway network is currently under-provided. A driver travelling west on the M4 in the area of Maidenhead, having also used the M25 for part of their journey may currently cover a distance of over 60 miles (96 km) without the opportunity to rest at an MSA; twice the advisory distance. The shortfall in provision is compounded by the fact that this section of the M4 experiences very high levels of traffic. Several planning applications for new MSAs on the M25 have recently been refused.

THE M4 MOTORWAY

5 The M4 was constructed during the 1970s. It has become a heavily used strategic motorway route between London, Bristol, the South West and South Wales. The importance of the motorway is confirmed by very high daily traffic figures. In 1998 approximately 186,100 vehicles per day used the M4, A404(M) and A308(M) in the area of Junction 8/9.

THE SITE

6 The site is located immediately to the south west of Junction 8/9 of the M4 motorway, as shown in Figure 1. The application site is currently in use for turf production and has a total area of 13 hectares.

7 The site is generally flat and at the same level as the main carriageway of the M4, with the motorway junction being elevated some 4-5 metres above the site. The extent of the site is defined by existing field boundaries marked by mature hedges and some trees.

THE PROPOSAL

8 The outline planning application is for the development of an MSA to serve westbound M4 traffic only. The MSA would be accessed from the motorway via a dedicated slip road from the off-slip at the Junction 8/9 interchange.

9 The main elements of the scheme are as follows:

- an Amenity Building of some 1600m^2 containing a self-service foodhall, waitress and fast food restaurants, retail shop, amusement area, public telephone and toilets/showers;
- a Lodge with 100 bedrooms;
- a Fuel Filling Station;
- picnic and play areas; and
- car, lorry, caravan and coach parking for approximately 391 vehicles.

10 An illustrative layout drawing demonstrating the proposed scheme is shown in Figure 2.

THE CHOICE OF THE APPLICATION SITE

11 There are several reasons for the choice of this site, and an understanding of these is important to both the planning application and the Environmental Statement.

12 A number of factors influence the choice and availability of a suitable site for accommodating a new MSA facility. These factors include:

- spacing from existing MSAs - the minimum advisory spacing between MSAs, as contained in Guidance issued by the Government, is 30 miles (48 km);
- spacing of 15 miles (24 km) is acceptable in certain circumstances;
- spacing from motorway junctions - the Highways Agency will not normally approve an access for an on-line MSA, ie. one accessed direct from the motorway via slip roads, within 2 km of an existing motorway junction;
- Green Belt - Government planning guidance contains a general presumption against locating MSAs in the Green Belt unless no alternatives exist outside the Green Belt or other areas of statutory planning constraint;
- a full consideration of environmental issues as contained in Government advice and regulations on Environmental Assessment;
- the lack of MSAs on the M25;
- recent planning refusals on the M25;
- a site located to meet the need for MSA facilities;
- a site with the least environmental impact and least visual intrusion in the countryside.

13 Analysis of these factors shows that the application site at Junction 8/9 is the most appropriate location for a new MSA on this stretch of the M4 and that a facility here will assist in meeting the shortfall of MSAs on the M25. It is particularly well suited to meeting the needs of westbound traffic.

DEFINING THE ENVIRONMENTAL ISSUES

14 Analysis of the site and consultation with the Local Planning Authority has determined that the following environmental issues need to be assessed:

- Landscape and visual impact
- Transportation and highways
- Socio-economic
- Noise and emissions to the air
- Ecology and Nature Conservation
- Drainage and water quality
- Archaeology and Cultural Heritage
- Agriculture

15 Of these issues, three are regarded as being of primary importance. First, the visual impact of the development in the general landscape from publicly accessible viewpoints and nearby properties. Second, the transportation and highway considerations, which relate to both the M4 motorway and the operation of Junction 8/9. Thirdly, the socio-economic issues which could result from development.

16 Secondary issues include the effects of surface water drainage from the site on the hydrology and quality of water courses in the vicinity. These have been addressed, along with the method of disposing of sewage from the development. Safeguarding measures for managing a spillage or leakage of any materials stored on the site have also been considered.

17 The effects of the development on noise, emissions to the air, ecology, archaeology, cultural heritage and agriculture have also been assessed by a team of consultants.

SUMMARY OF ENVIRONMENTAL EFFECTS

18 Each environmental issue has been assessed to determine the effects of the scheme and identify possible "mitigation" measures (ie. steps that can be taken to remove, reduce or compensate for any adverse impact). The conclusions of the assessment are set out below.

Landscape and Visual Impact

19 The landscape and visual impact assessment has examined possible views of the site from a range of publicly accessible viewpoints. This assessment has determined that potential views of the site can be divided into three categories: close range, middle range and views from the M4 motorway and Junction 8/9. In each category it has been found that only very limited views of the site are available.

20 Close range views are limited to those from the south of the site. The topography to the south of the site is nearly flat with field boundaries marked by hedgerows. This vegetation obscures views of the site such that it is not visible from houses on the edge of Holyport. New tree planting will obscure views of the site from nearby footpaths.

21 Middle range views are limited to just a few viewpoints north of the site. Existing vegetation, as well as new planting and earth mounding included in the proposals, will obscure these views. The development will therefore have only a minimal effect on these viewpoints.

22 Views of the site from the motorway and Junction 8/9 are limited by the presence of existing vegetation. Planting on the embankment to the southern side of the junction screens views of the site, although views exist from the slip road where there is little intervening planting.

23 Dense vegetation to the east of the junction and the earthworks which comprise the junction itself limit views of the site for the west bound traveller. The eastbound traveller has more of a view towards the site. Tree planting and some subtle earth contouring will screen these views.

24 A number of mitigation measures can be employed to minimise the visual effect of the new MSA. These measures include the siting of the built elements of the MSA away from the more visually sensitive southern and western boundaries of the site and the extensive tree and shrub planting and some gentle earth shaping around the perimeter of the site.

25 In relation to lighting, careful design including height restrictions and the use of directional lighting units, coupled with landscaping measures, will minimise light impact.

26 The development of a new Motorway Service Area on a previously undeveloped area of land will reduce its openness, and it will therefore weaken to some degree the open landscape character and such rural qualities that the area currently has. However, the effect in context of the proximity to the motorway, and to a lesser degree the other urban influences will not be significant on the landscape character of the area, due to the site being visually well contained.

27 The overall conclusion is that with sensitive site planning and mitigation measures as proposed, the development can be successfully accommodated on this site with only very limited effect, even when first constructed. As the woodland planting both within the MSA site and elsewhere in the application area matures, the development will be adequately screened from view.

Transportation and Highways

28 From the assessment of traffic and highways considerations, it is concluded that the provision of a new westbound MSA at Junction 8/9 of the M4 will comply with Government Guidance on the provision of MSAs. The Highways Agency has previously confirmed that the site is adequately spaced from all existing MSAs and willbe given MSA signing if planning consent is obtained. The purpose of an MSA is to provide essential facilities for drivers which are easily and readily accessible during their motorway journey, thereby improving road safety.

29 Access to the site will be via a dedicated slip road from the westbound M4 at Junction 8/9 into the MSA site, a dedicated slip road will also be used by those vehicles returning to the west bound M4. Other vehicles will return onto the road network via a new give way egress provided at the roundabout.

30 These measures have been designed taking into account the potential of proposals by the Highways Agency to enhance the capacity of the junction through carriageway widening and traffic signal modifications. The provision of dedicated slip roads for the MSA have been shown in analysis to provide some relief to traffic flow during peak hours.

31 The internal road layout of the MSA has been designed in a way which allows the safe circulation of traffic. All routes will be fully signed to further assist safe and easy access and manoeuvring through the site.

32 Access to the site for construction traffic will be from a temporary access created on the slip road leading from the Junction 8/9 roundabout to the westbound M4. Once the dedicated access road from the motorway interchange is constructed then construction traffic access will be from the motorway junction.

33 Lighting arrangements have been employed to ensure adequate and safe lighting whilst minimising the effects of light pollution in the open countryside.

34 In conclusion, the off-site work for the MSA cater for traffic redistribution without detriment to the existing highway network or the potential of Highways Agency proposals for junction improvements. Indeed, the associated off-site work will provide some relief to the operational capacity of the junction during peak hours and extend its design life. A major beneficial effect of the westbound MSA is the highway safety advantages of locating an MSA on this stretch of the motorway to provide rest, refreshment and refuelling facilities for part of the motorway network where such facilities are lacking.

Socio-economic

35 Surveys and research undertaken for the Department of Transport has shown that a proportion of motorway accidents are caused by fatigue or by drivers falling asleep at the wheel. Such accidents include a high proportion of fatalities and serious injuries. The research concludes that opportunities for drivers to break

their journeys are to be recommended in order to reduce the chances of fatigue related accidents. The MSA will provide an opportunity to stop when the need arises rather than have to continue driving. This is likely to reduce the risk of accidents on the motorway and road network, and the associated financial and human costs.

36 It is estimated that the construction phase, although short-lived, will generate in the range of 75-100 full-time equivalent jobs in the contracting and fitting-out sector. There may also be a small scale multiplier effect with supplies and equipment being obtained locally. When in operation the Service Area will sustain the equivalent of between 100-130 full-time jobs as well as employment that will be generated for suppliers and maintenance contractors.

37 The road improvements will extend the time over which Junction 8/9 will accommodate increasing levels of traffic in conjunction with the Highways Agency's proposals. The funding of this work by the applicants will therefore represent a cost saving in terms of public expenditure. There are no identified adverse socio-economic effects.

Noise and Emissions to Air

38 The effects of noise arising from the site have been assessed for both the construction stage and during operation.

39 During construction, measures can be employed to control high intensity noise at source. The buildings, which are the main construction task, are located on the northern part of the site near to the motorway. Noise from the motorway will have a significant effect in masking the noise emanating from the site during construction.

40 The likely effects of noise on the environment when the MSA is operational have been assessed using methods employed by the Department of Transport for calculating road traffic noise. The assessment particularly examined the likely effect on Cresswells Farm, given its proximity to the site.

41 The results of the assessment were that the increase in noise levels at Cresswells Farm would not be significant. With the traffic noise from the M4 and Junction 8/9 dominating the local noise environment, it is unlikely that the inhabitants of the Farm would perceive the additional noise created by an operational MSA at the application site. The same applies to users of the footpaths near to the site.

42 The proposal will have no adverse effect on the present level of emissions from vehicle exhausts within the motorway corridor. The effects of dust during construction will be minimised by water spraying.

Ecology and Nature Conservation

43 The site is of extremely low nature conservation value, with only some very local interest confined to the motorway junction embankment and perimeter hedgerows. The proposals will retain the hedgerows and therefore have no significant adverse impact on existing wildlife habitat.

44 The scheme does present a number of opportunities to enhance the nature conservation value of the site. The embankment for the ramped access to the site will provide replacement and extended habitat for the vegetation displaced from the motorway junction embankment. The proposed tree planting on the site will mainly be of native species combined with areas of more open grassland sown with a mixture of native grasses and wildflowers. The surface water lake built for the excess run-off from the scheme will create an area of interest for nature conservation. These measures will achieve positive benefits for wildlife by extending the areas of habitat and increasing habitat diversity.

Drainage and Water Quality

45 In order to protect nearby water courses from pollution and flooding, a lake will be constructed on land to the west of the site. The lake will have the effect of regulating surface water flows from the site to the receiving water course, the River Bourne. All of the hard surfaced areas will discharge via storm by-pass interceptors to trap oil and other pollutants, providing additional protection for water quality.

46 Sewage will be piped to the Maidenhead Sewage Treatment Works at Bray Wick, where there is sufficient capacity to deal with the additional flow. The sewage from the site will go direct to the Works via a pumping main, with no effect on adjoining water courses.

47 Measures will be employed to prevent leakage from fuel stores and pipes at the fuel filling station to safeguard the quality of the ground water. No problems are therefore likely to arise in terms of ground water contamination.

48 Subject to these measures, any potential adverse effects on the adjoining watercourses will be removed or reduced and the risk of spillage or leakage into ground water will be minimised.

Archaeology and Cultural Heritage

49 Examination of archaeological records has revealed only one reference to a potential area of archaeological evidence on the site. The archaeological find within the site is of little importance itself.

50 Within relatively short distances of the site, however, evidence has been found from a number of historical periods, including prehistoric deposits. Further examination of the site will be undertaken should the consultant archaeologist of the local authority make this request. A specification for this has been previously been agreed with the archaeology advisor to the planning authority.

51 The site adjoins the Holyport Conservation Area and Cresswells Farm just to the east of the site including a Grade II listed building. Extensive studies at the time of a previous Planning Inquiry showed that with the siting of the development as shown and with sensitive tree planting and gentle ground contouring, there will be no adverse effects on the setting and character of the Conservation Area or the Listed Building.

Agriculture

52 Government guidance states that if a proposed development occupies in excess of 20 hectares of best quality agricultural land, this constitutes a strategic land loss which should be subject to comment by the Ministry of Agriculture Fisheries and Food (MAFF).

53 Of the total area of the planning application, some 13ha, only 3.5ha will be covered by hard surfacing within the MSA and therefore permanently lost to agriculture.

54 The proposals do not represent a strategic land loss likely to be of concern to MAFF.

SUMMARY OF MITIGATING MEASURES

55 A range of measures have been included in the design of the scheme to "mitigate" any adverse environmental impact, ie. to reduce or to compensate for some effects.

56 These measures include the following:

- design and layout of the MSA which locates the buildings on the least visually sensitive part of the site to minimise visual intrusion;
- improvements to the motorway junction which will enable it to accommodate MSA traffic and extend the design life of the existing interchange;
- gentle earth contouring and extensive tree planting to visually screen the development and to reduce noise intrusion;
- the creation of enhanced wildlife habitat area on and adjoining the site, including planting of native tree and grassland species;
- regulating the flow of surface water from the site through a lake and the use of interceptors to protect water quality;
- the incorporation of low lighting columns and the use of shields to prevent the sideways spread of light into open countryside;
- water spraying to reduce dust during dry construction periods; and the control of extractor fans and other equipment on the buildings to minimise noise generation from the development.

CONCLUSIONS

57 An appraisal of alternative sites has shown that the application site represents the best location for a westbound MSA serving traffic on this section of the motorway network.

58 The environmental assessment has shown that the proposed MSA has no significant adverse impact on the identified environmental issues. Such impacts as have been identified have either been removed or reduced by the careful design of the scheme, or safeguarded by the mitigating measures proposed.

59 The scheme also has a number of significant advantages including:

- providing facilities for motorist using nationally important strategic traffic routes;
- enabling motorists to find accommodation on route, thereby avoiding trips off the motorway, saving fuel, pollution and congestion;
- providing benefits in terms of increasing highway safety;
- creating between 100 and 130 full time equivalent jobs; and
- providing an enhancement of the wildlife value to the peripheral areas of the site and adjoining land

60 The overall conclusion is that an MSA can be accommodated on the site without any significant adverse environmental impact whilst generating a number of important benefits for motorway users.

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PART ONE INTRODUCTION

The Joint Applicants

1.1 Boulevard Land Ltd
Boulevard Land Ltd is a development company with experience in the promotion of Motorway Service Areas (MSAs). The company has submitted an outline planning application and controls the land which is the subject of this planning application and adjoining land to the west.

1.2 Granada Hospitality Ltd
Boulevard Land have reached an agreement with Granada Hospitality Ltd who will develop and operate the site in the event that planning consent is achieved. Granada Hospitality Ltd is the leading Motorway Service Area operator in the country. Granada's involvement in the project means that the implementation and long term management of the MSA will benefit from their expertise in the design, development and operation of MSAs.

The M4 Motorway

1.3 The M4 motorway was built in the 1970s. It has become a heavily used strategic motorway route between London, Bristol, the South West and South Wales. In 1998 approximately 186,100 vehicles per day used the M4, A404(M) and A308(M) in the area of Junction 8/9. Traffic volumes are expected to continue to grow in the future with the present levels of congestion expected to increase. In such circumstances the need for MSA facilities is increasing and is likely to continue to increase.

The Site

1.4 The site is located immediately to the south west of Junction 8/9 of the M4 and is shown in Location Plan, Figure 1 and Aerial Photograph Figure 2 (Page 2). The application site area totals 13ha and comprises agricultural land, currently used for the production of turf. The site is generally flat and at the same level as the main carriageway of the M4 with the motorway junction being elevated around 4-5 metres above the site. The extent of the application is defined by existing field boundaries.

The Proposal

1.5 This Environmental Statement accompanies an outline planning application submitted for development of a westbound MSA. The MSA would be accessed by a dedicated slip road from the off-slip at junction 8/9 serving only west bound M4 traffic.

1.6 The main elements of the scheme are as follows:

- an Amenity Building of some 1600m² comprising a self-service foodhall, waitress and fast food restaurants, retail shop, amusement area, public telephones and toilets/showers;
- a Lodge with 100 bedrooms;
- a Fuel Filling Station;
- picnic and play areas;
- car, lorry, caravan and coach parking for approximately 376 vehicles.

1.7 An illustrative layout drawing demonstrating the scheme is shown in Figure 3.(Page 3)

Need for the Proposal

1.8 Legislative changes in 1992 enabled MSAs to be initiated by the private sector, whereas previously they could only be promoted by the Department of Transport.

1.9 The Government's desire to provide more motorway service facilities is currently set out in PPG13 Annex A para.5:

> *"The Government is committed to improving the service offered to motorway users through an increase in the availability and choice of MSAs"*

1.10 In July 1998 the Minister for Roads announced that priority was to be given to ensuring that MSAs are available roughly every 30 miles (48km) throughout the motorway network and that additional "infill" services at 15 mile (24km) intervals will still be allowed, but only exceptionally and where a clear and compelling safety case has been established. The implementation of this policy should result in motorists having more places where they can take a break during their journey.

1.11 Currently a driver travelling west on the M4, having also used the south west sector of the M25 for part of the journey may cover a distance of over 60 miles (96km) without the opportunity to stop at an MSA; twice the advisory distance (Figure 4); or having used the north west sector of the M25, a distance of 52 miles (83 km). The shortfall in provision is compounded by the fact that this section of the M4 experiences very high levels of traffic.

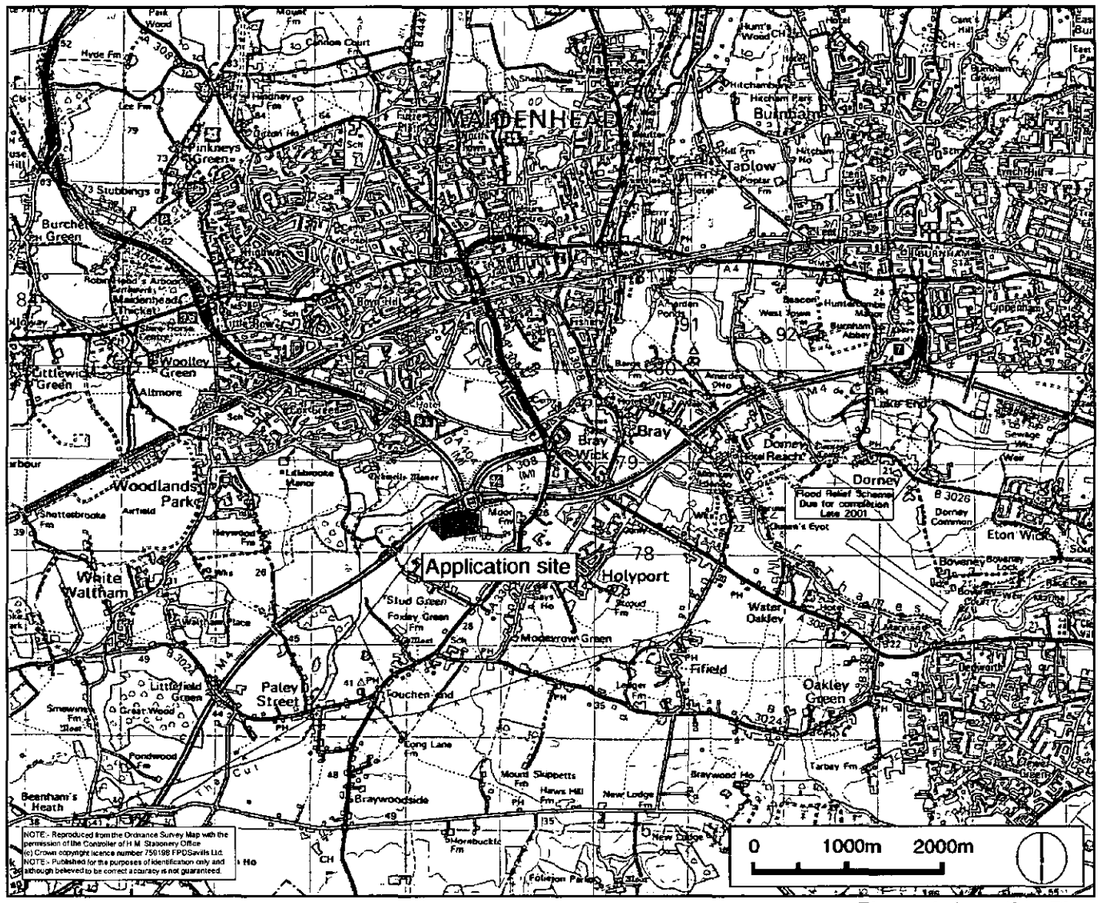


Figure 1: Location Plan

1.12 The Secretary of State has previously considered whether two new MSAs should be allowed on the western sector of the M25 in order to meet the need for facilities. He attached considerable weight to Inspectors' Reports regarding the harm that would be caused to the Green Belt, and to the congested nature of the western sector of the M25. The Secretary of State concluded that only one proposal should be built in the south west sector as the benefit to motorists on the M25 of a second MSA in the north west sector was outweighed by the harm to the Green Belt and traffic considerations.

1.13 There have been five proposals for additional Service Areas on the M25, three to the north of the M4 and two to the south of the M4. The Secretary of State has previously concluded that due to congestion, permission should not be granted for any of the sites on the M25 north of the M4. Of the two options to the south of the M4, New Barn Farm, Cobham was the preferred choice, although the proposal would be in conflict with Green Belt policy.

1.14 The Secretary of State's approval of a new MSA at Cobham has been overturned by the High Court and no site located on the M25 from Clacket Lane MSA to Reading can meet the need effectively without also being located in the Green Belt, hence there are no approvals for new MSAs on the M25.

1.15 A new Service Area on the M4 would help meet the acknowledged need for facilities on the M25, a point recognised by Inspectors dealing with previous MSA appeals on the M4, including the site at Junction 8/9 Figure 5 (Page 5). Even if one new MSA were to be permitted on the M25, there will remain a significant gap between services at Reading and those at South Mimms, and a gap of over 30 miles (48 km) to New Barn Farm on the M25.

Employment

1.16 The scheme will directly create in the region of 100 – 130 full time equivalent jobs. A range of related local employment opportunities will also be created as a consequence of the scheme, for example cleaning services and contractors for landscape and building maintenance.

This Document

1.17 This document is the Environmental Statement (ES) for the proposed westbound MSA as specified by Schedule 2 of the Town and Country Planning (Environmental Impact Assessment)(England and Wales) Regulations 1999.

1.18 MSAs are included in Schedule 2 of the Regulations as a form of development which requires environmental assessment where the effects of the proposal are likely to be significant due to their location, nature and scale, with a threshold for development of more than 5 hectares.

1.19 The ES:-

- describes and explains the proposal, the existing environment of the site and its surroundings;
- defines the environmental issues and assesses the environmental effects of the proposals;
- describes measures proposed to avoid, reduce or remedy those implications where necessary.

1.20 A brief non-technical summary of the overall Environmental Statement is available separately as well as being included at the front of this document.

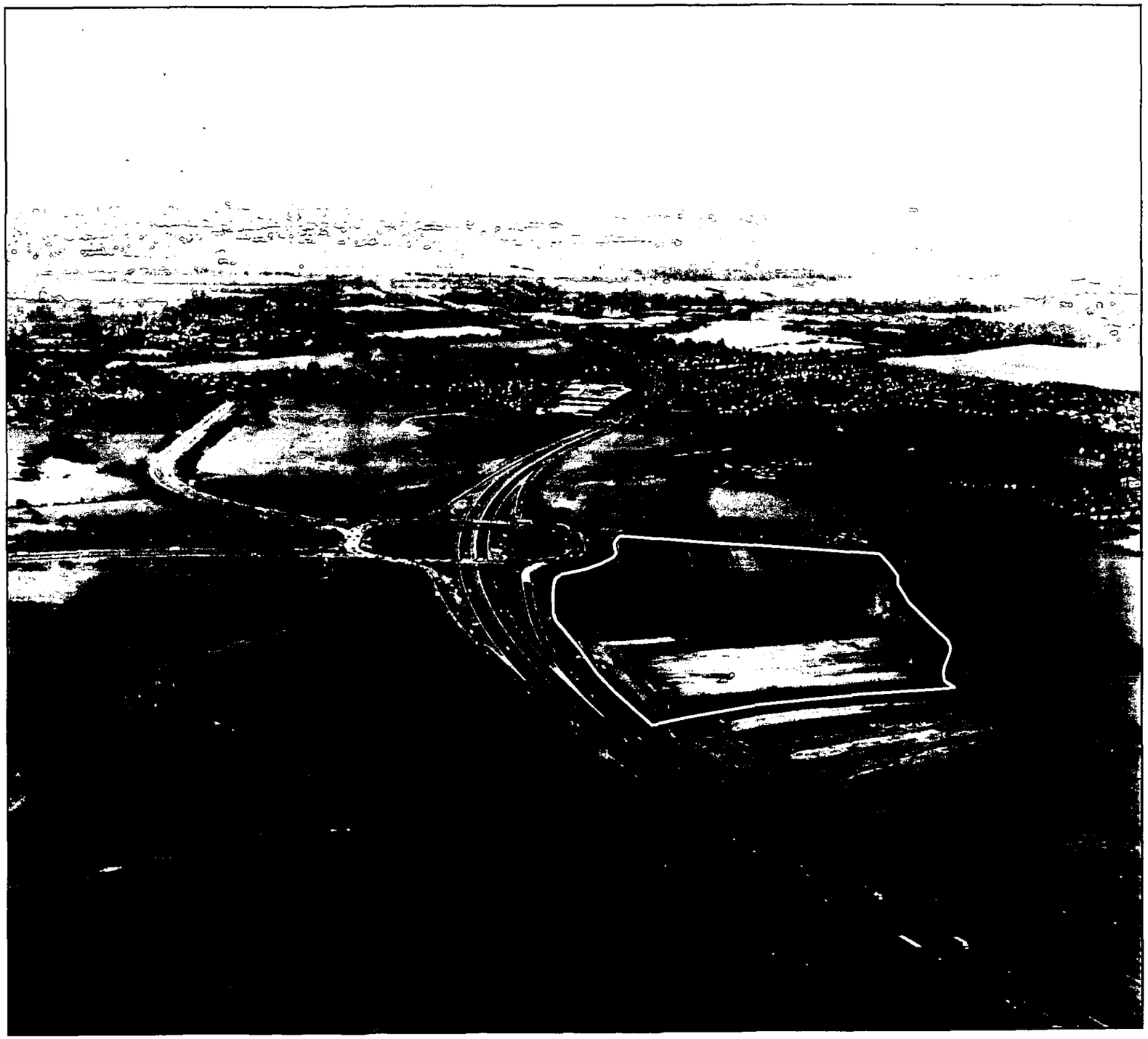


Figure 2: Aerial Photograph

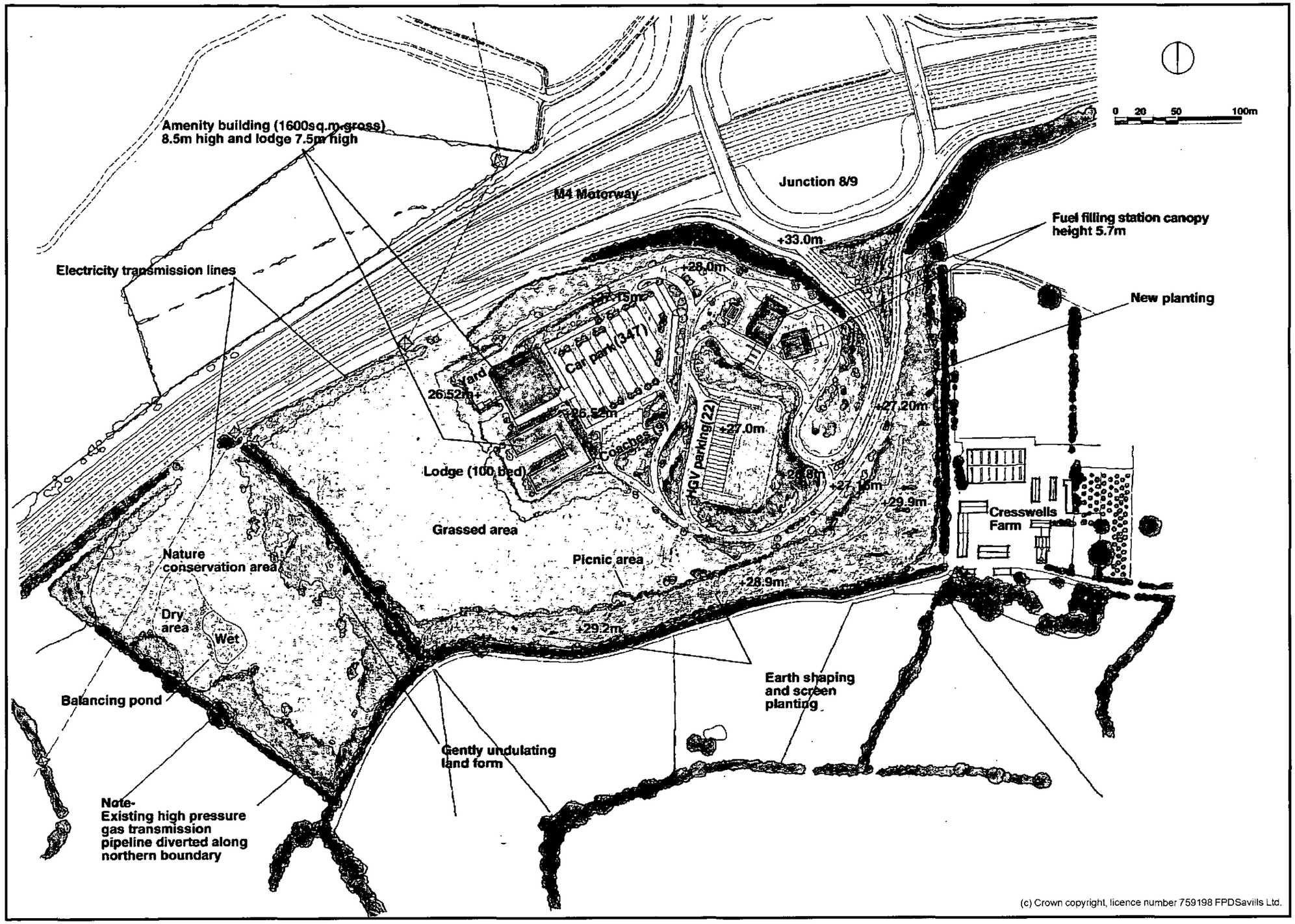


Figure 3: Illustrative Layout

PART TWO THE PLANNING APPLICATION

Introduction

2.1 The planning application is in outline form, but because of the size and nature of the development, an illustrative drawing has been prepared to demonstrate how it is proposed to develop the Motorway Service Area. This illustrative layout has been prepared in response to a number of identified operational and environmental factors. To meet the requirements arising from a recent High Court decision, building heights and sizes have been specified, drawings and photographs have been included to show their likely appearance and hence to assist in assessing their impact.

The Site

2.2 The site is currently in agricultural use. The land has previously been used for grazing but is currently used for turf production.

2.3 The site is bounded by the motorway and the elevated motorway junction to the north with the remaining southern, western and eastern boundaries defined by existing hedges and trees. These natural boundaries create a visually enclosed area of land which forms the application site.

Location and Access

2.4 The site is located approximately 2 kilometres (km) south of Maidenhead and about 0.5 km north west of Holyport. It is about 24 km (15 miles) from the existing Heston Services to the east and 26 km (16 miles) from Reading (Theale) Services to the west.

2.5 The MSA will have a dedicated access for west bound traffic from the west bound off-slip to the motorway junction. Junction 8/9 is the interchange between the M4 and the A308(M) and A404(M).

Site Surroundings

2.6 The land surrounding the site is primarily in agricultural use and characterised by gently undulating scenery with field boundaries marked by hedge lines and mature trees.

2.7 To the south east is the settlement of Holyport. South of the site, scattered development extends west from Holyport to Stud Green. To the north is the motorway as well as the A404(M) and A308(M) which converge at the elevated Junction 8/9.

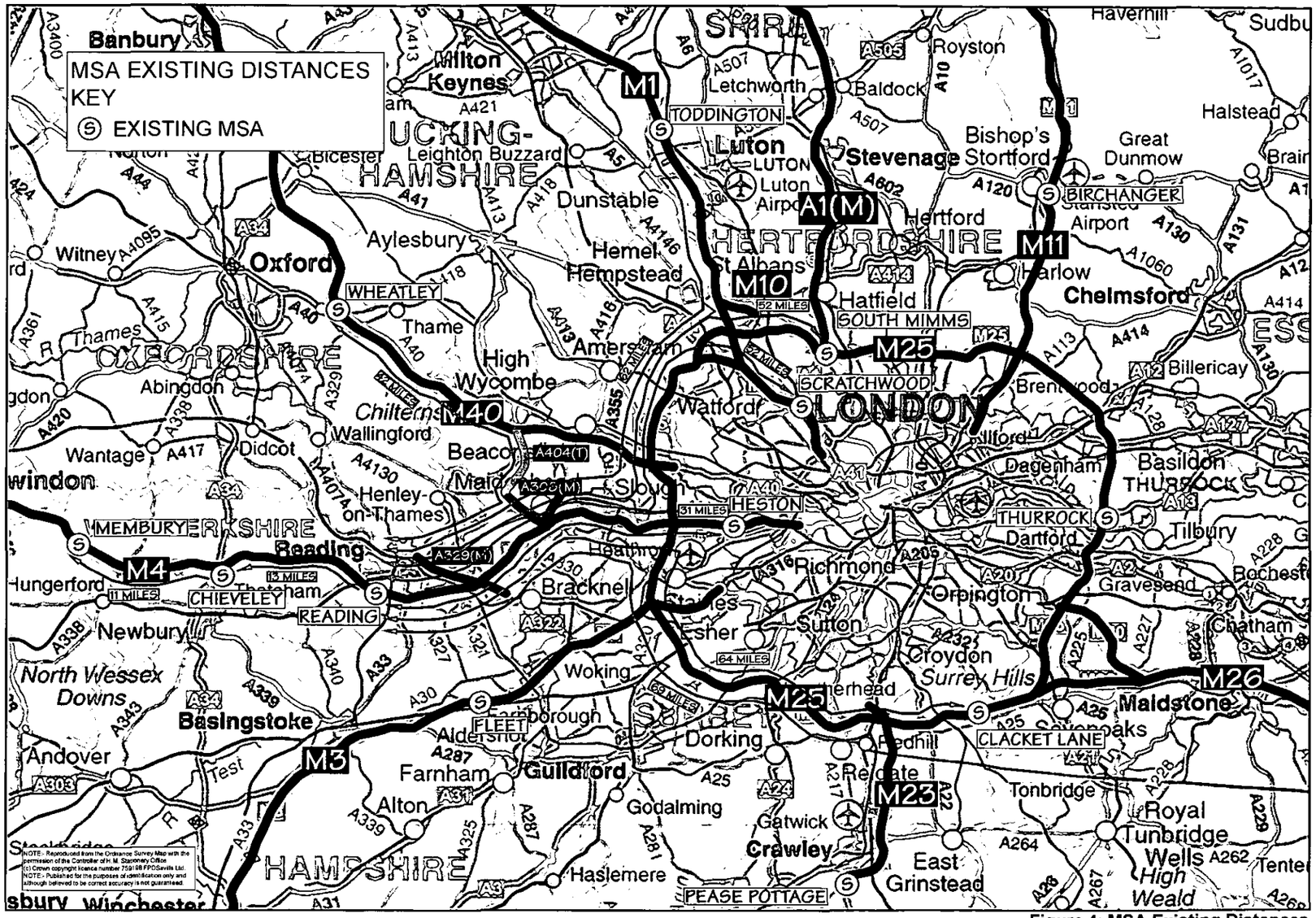


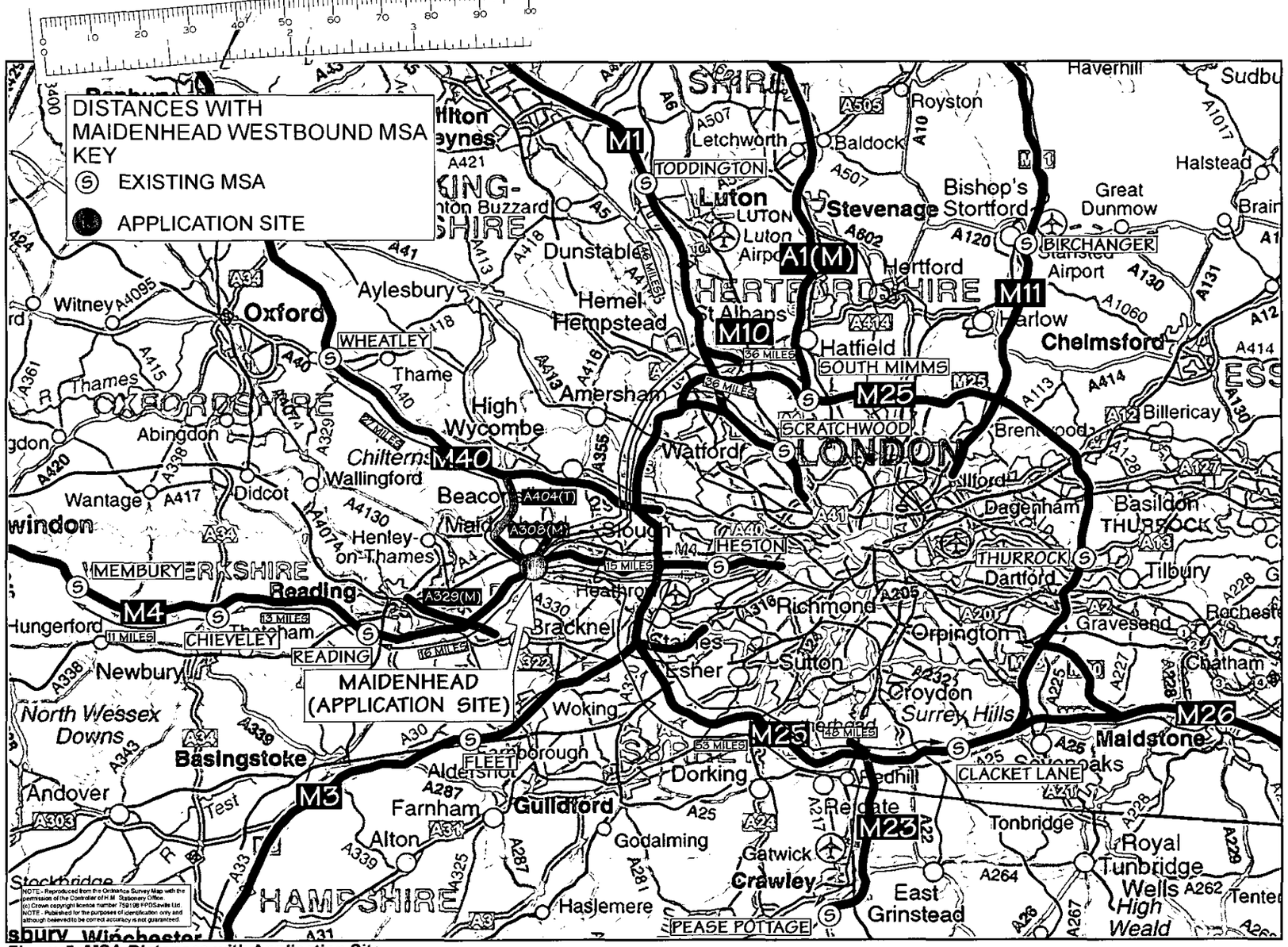
Figure 4: MSA Existing Distances

The Choice of Junction 8/9 as a Site for a westbound MSA

2.8 There are several reasons for the choice of this site, and an understanding of these is important to both the planning application and the Environmental Statement. A number of factors will influence the choice and availability of a suitable site for accommodating a new MSA facility.

2.9 These factors include:

- spacing from existing MSAs - the minimum advisory spacing between MSAs, as contained in Guidance issued by the Government, is 30 miles (48 km);
- spacing of 15 miles (24 km) is acceptable in certain circumstances;
- spacing from motorway junctions – the Highways Agency will not normally approve an access for an on-line MSA within 2 km of an existing motorway junction;
- there is a general presumption against development in the Green Belt(PPG2). Government Guidance in Annex A of PPG13 states that MSA development should comply with PPG2, except in very special circumstances, where a lack of signed MSAs could be a material consideration which could justify such an exception;
- a full consideration of environmental issues as contained in Government advice and the Regulations on Environmental Assessment;
- the lack of MSAs on the M25;
- recent planning refusals on the M25;
- a site located to meet the need for MSA facilities;
- a site with the least environmental impact, the least visual intrusion in the countryside and the least impact on the Green Belt.


DISTANCES WITH
MAIDENHEAD WESTBOUND MSA
KEY
EXISTING MSA
APPLICATION SITE
MAIDENHEAD
(APPLICATION SITE)
M1
M10
M11
M25
M40
M4
M3
M23
M26
A1(M)
Luton
Stevenage
Hatfield
Watford
LONDON
Oxford
Aylesbury
Reading
Basingstoke
Guildford
Maidstone
Chelmsford
Dartford
Crawley
Richmond
Heathrow
Slough
Windsor
Newbury
Andover
Farnham
Alton
Hasjemere
Godalming
Dorking
Woking
Sutton
Esher
Orpington
Gravesend
Tilbury
Royston
Baldock
Letchworth
Dunstable
Hemel Hempstead
Amersham
High Wycombe
Abingdon
Wantage
Didcot
Wallingford
Henley-on-Thames
Bracknell
Ascot
Epsom
Croydon
Surrey Hills
Tonbridge
East Grinstead
Royal Tunbridge Wells
High Weald
Basildon
Dagenham
Billericay
Halstead
Great Dunmow
Bishop's Stortford
Harlow
Hertford
Witney
Thame
Chiltern
North Wessex Downs
Test
Thames
TODDINGTON
WHEATLEY
SOUTH MIMMS
SCRATCHWOOD
HESTON
THURROCK
BIRCHANGER
CHIEVELEY
READING
MEMBURY
FLEET
PEASE POTTAGE
CLACKET LANE
Haverhill
Sudbu
Brain
Rochest
Chatham
Aldershot
Basingstoke
Newbury
Reading
Oxford
Luton
Stevenage
Watford
Guildford
Maidstone
Chelmsford
Crawley
Richmond
Heathrow
Slough
Windsor
Dartford

PART THREE DEFINING THE ISSUES

The Statutory Context

3.1 The scope of this study has been governed by the EC Directives 85/337 and 97/11 implemented by The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999, as amended by The Town and Country Planning (Environmental Impact Assessment) (England and Wales) (Amendment) Regulations 2000, assisted by DETR Circular 2/99. Additional sources of information include the publication "Preparation of Environmental Statements for Planning Projects that require Environmental Assessment: A Good Practice Guide" (HMSO 1995).

Scope of the Environmental Statement

3.2 The environmental issues were defined by a combination of two processes; firstly analysis of the likely or possible impacts of the development on a comprehensive list of environmental issues derived from those listed in the Regulations; and secondly, from communication with the Local Planning Authority, and with statutory and non-statutory consultees. Planning policies have also influenced the scope of this assessment.

The Issues Defined

3.3 The term "scoping" refers to the identification of environmental issues. The Scoping Diagram shows the various issues and how they may be affected by the development either during construction or following completion.

The following were identified as the issues in relation to which direct and indirect environmental effects should be assessed for this particular project. The list has been reviewed by the Local Planning Authority.

3.4 Of the 8 issues identified, 3 are regarded as being of primary importance during both construction and operation of the MSA.

Primary issues
- Landscape and Visual impact
- Transportation and Highways
- Socio-economic

Secondary issues
- Noise and Emissions to the Air
- Ecology and Nature Conservation
- Drainage and Water Quality
- Archaeology and Cultural Heritage
- Agriculture

3.5 Potential impact during operational use of the proposed MSA, and impact during its construction, have both been assessed. The ranking of issues acknowledges positive potential effects as well as potential adverse impacts. For this reason, Socio-economic effects (which will be positive) are included as a primary issue.

Primary Issues

3.6 Consideration of the potential visual impact of the development in the general landscape is of primary importance, from publicly accessible viewpoints and nearby properties including Listed Buildings of the Holyport Conservation Area. The effect on the landscape character of the site have also been assessed.

3.7 Also of primary importance is the consideration of transportation and highways effects, which relate primarily to the M4 motorway, but also include the wider benefits of improved road safety for motorway users.

3.8 The benefits to the wider community of providing adequately spaced services for motorists are of primary importance as is the potential generation of local employment.

Secondary Issues

3.9 The possible effects of the proposal on noise have been assessed, as well as emissions to the air.

3.10 An ecological appraisal of the site, followed by analysis of the likely effects of the development on the site has been undertaken. The effect of the proposed nature conservation area adjoining the site have also been considered.

3.11 The effects of surface water drainage from the site on the hydrology and quality of watercourses in the vicinity have been addressed, along with the method of disposing of sewage from the development. The safeguarding measures for managing a spillage or leakage of any materials stored on the site have also been considered.

3.12 An archaeological assessment of the site has been undertaken. The potential effects on the Holyport Conservation Area and the listed Creswells Farm building have been assessed. The effects of the proposed development on agriculture have also been appraised.

3.13 The Scoping Diagram (figure 6) identifies the issues that could be affected by the proposal. The design of the scheme and incorporation of mitigation measures will influence the degree of impact which will actually result.

Environmental Issues	During Construction	Following Completion
Landscape and Visual Impact	**	**
Transportation and Highways	**	**
Socio-economic	**	**
Noise and Emissions to Air	*	*
Ecology and Nature Conservation	*	*
Drainage and Water Quality	*	*
Archaeology and Cultural Heritage	*	*
Agriculture	*	*

SCOPING DIAGRAM ** Primary Issue * Secondary Issues

Figure 6: Scoping Diagram

Team of Consultants

3.14 Having defined the environmental issues, a project team was assembled which included the following disciplines: town planning, landscape architecture, ecology, transport planning, drainage and services engineering, noise consultancy, archaeology and agricultural analysis.

3.15 The project team members are as follows:

- FPDSavills Planning (Planning, Policy and Environmental Assessment) - have been involved in the planning, design and Environmental Assessment of MSAs since deregulation in 1992. This has involved work on MSAs on the M6, M42, M5 and M4 motorways.

- URS Thorburn Colquhoun Consulting Engineers (Highways, Services, Drainage, Transportation, Noise and Emissions to Air) - are retained by Granada Hospitality Ltd to provide engineering consulting services on all the MSAs they operate. URS Thorburn Colquhoun have extensive experience on the design of MSAs and a thorough knowledge of the engineering issues which may arise in relation to such developments.

- Countryside Planning and Management (Archaeology) - have undertaken similar archaeological assessments of MSA sites elsewhere on the motorway network and have widespread experience of resolving archaeological issues arising from developments of similar scale and complexity.

- Matrix Partnership Ltd (Landscape) – specialise in urban design and landscape architecture. Their experience ranges from the design and supervision of individual landscape and building projects to the design and implementation of urban regeneration and new settlement proposals. Graphic visualisation of projects, both hand drawn and computer generated is a particular strength of the practice.

Consultations

3.16 During preparation of the Environmental Statement, discussions and consultations have taken place with authorities and organisations most likely to be affected by the proposal, and who will be consulted by the Local Authority upon submission the Environmental Statement. These discussions have helped to identify and clarify the environmental issues, to establish the effects of the proposals on each issue and identify measures which not only avoid, reduce or remedy those effects, but which also contribute to achieving an improved environment.

3.17 Where necessary the proposals have been designed or re-designed to accommodate the consultees' requirements following these consultations.

The Consultees

3.18 During preparation of the Environmental Statement the consultees listed below were contacted. Detailed discussions have been held with many of those and all have either been offered or will be offered the opportunity to comment before the design is finalised.

- Royal Borough of Windsor and Maidenhead: planning, transportation;
- Highways Agency: motorway services areas unit, and regional office;
- Environment Agency; English Nature; English Heritage.

Responding to Comments

3.19 Comments from the organisations contacted during the preparation of the scheme have assisted greatly, both in identification of the issues and in determining the form of the development. However, consultation is still ongoing, and comments will be carefully considered and responded to by the applicants. Granada's 35 years experience as an MSA operator has been invaluable in designing this facility which embodies high standards of design and safety, as well as respecting environmental considerations.

The Structure of this Document

3.20 The remainder of this statement is organised as follows; Part Four examines how this particular site is appropriate as the location and it considers the available alternatives. Parts Five to Twelve assess the environmental effects of the scheme on each of the identified issues and explains which amendments to the scheme were introduced to mitigate any identified adverse impact.

3.21 Mitigating measures which are proposed to remove, balance or compensate for adverse impact are summarised in Part Thirteen. Finally, a number of conclusions are reached in relation to the environmental impact of the scheme.

3.22 Government Guidance on MSA spacing uses distances measured in miles rather than kilometres, so when discussing the issue of spacing, imperial measurements are used first with metric units provided in brackets. Elsewhere in this document metric units are used with imperial units provided in brackets.

PART FOUR CONSIDERATION OF ALTERNATIVE SITES

Introduction

4.1 The first part of this section examines the strategic constraints imposed by the Highways Agency, planning policy and other factors that influence the choice of location for a new MSA on the M4. These considerations include the spacing from existing MSAs, spacing from existing junctions and consideration is given particularly to the extent and nature of the Green Belt. The criteria set out in Policy GB11 of the Local Plan are also considered.

4.2 In the second part of this section, a number of possible alternative sites are identified within the area defined by the strategic constraints. The suitability of these alternatives as a location for an MSA is analysed in detail with regard to site specific constraints and opportunities. The criteria used in this more detailed assessment include landscape impact, highway safety and access issues, archaeology and ecology as well as planning policies.

4.3 There are two possible designs for access to an MSA, on-line and off-line. An on-line service area is accessed directly from the motorway via slip roads, while an off-line service area is accessed from an existing motorway junction. The Highways Agency does not distinguish the two in terms of their ability to meet motorists' needs.

Strategic Constraints - Spacing from Existing MSAs

4.4 In July 1998 the Minister for Roads announced a revised policy for the spacing of Motorway Service Areas. His statement indicated that priority is to be given to ensuring that MSAs are available roughly every 30 miles (48km) throughout the network. The statement also gave guidance in respect of additional "infill" services, which will still be allowed at a spacing of about 15 miles (24 km), but only exceptionally and where a clear and compelling safety case has been established.

4.5 In practice, the Highways Agency has demonstrated a degree of flexibility in the application of the new guidance. This flexibility is allowed for in paragraph 5 of Circular 1/94 which states;

> *"The Departments will generally not expect to provide signs or (in respect of sites not accessed from an existing motorway junction) to allow access to the motorway for any services development less than fifteen miles from the nearest existing MSA (or MSA site with planning consent and for which signing has been agreed). Exceptions to this minimum interval may be agreed, for example, where existing sites are a little less than thirty miles apart and additional services are proposed roughly half way between them."*

4.6 On the M4, the distance between Theale MSA and Heston MSA is 31 miles (50km) Figure 4 (Page 4). Therefore, in the circumstances that exist on the M4 the Guidance does not anticipate spacing less than the 15 miles (24km) stated as a desirable minimum.

4.7 However, in order to undertake a rigorous examination of potential alternative sites, this assessment has used the absolute minimum spacing of 10 miles (16km) to define the area of search. MSAs have on occasions been allowed as close as 10 miles (16 km) from existing MSAs as in the case of Stafford north bound MSA on the M6, 10 miles (16 km) from Keale MSA. All alternative sites which are located within 10 miles (16km) of an existing MSA are excluded from the analysis.

4.8 Applying the 10 mile (16km) absolute minimum spacing defines the area of search as the section of the M4 from the minor road overbridge between Straight Mile Farm and Haines Hill in the west (Grid ref SU820726) and Junction 6 in the east. The distance along the motorway between these two points is approximately 11 miles (18km).

4.9 The alternative sites identified in this document and shown in Figure 7 (Page 9) are all substandard with regard to the recommended spacing, but have been examined in order to provide a comprehensive analysis.

Strategic Constraints - Distance from Existing Junctions

4.10 An important criterion in determining the location of an on-line MSA is the requirement of the Highways Agency that no new junctions on a motorway should be created within 1.24 miles (2 km) of an existing junction. This distance is referred to as the "weaving distance" and allows for the safe movement of vehicles between lanes in the approach and exit from junction slip roads.

4.11 The nearest junction to the west is Junction 10. The weaving distance from Junction 10 impinges only marginally into the 11 mile (18km) section of the M4 previously identified.

4.12 To the east, the junctions are spaced relatively closely together. The distance between Junction 8/9 and Junction 7 is only some 2.5 miles (4 km). There is not therefore sufficient distance between these two junctions to create new slip roads to serve an on-line MSA.

4.13 Similarly the spacing between Junction 6 and 7 is less than 1.8 miles (3 km) which precludes new slip roads serving an on-line MSA between these junctions.

4.14 The conclusion of the assessment of strategic constraints is that to the west of Junction 8/9 the possible location for an on-line MSA is limited to the stretch of the M4 between the outer limits of the weaving distances of Junction 10 and Junction 8/9, a distance of 4.5 miles (7 km). To the east of Junction 8/9 the location of existing junctions precludes any alternative on-line MSA site.

4.15 Any MSA site to the east of Junction 8/9 would therefore have to be off-line ie. at Junctions 6, 7 or 8/9. Alternative locations in each sector of these junctions and in the other sectors of Junction 8/9 in addition to the proposed site have therefore been considered.

Green Belt

4.16 In planning terms, the functions of Green Belt designation are of primary importance, PPG 2 contains a general presumption against inappropriate development in the Green Belt.

4.17 Department of the Environment, Transport and the Regions guidance for the location of MSAs, contained in Annex A of PPG 13, is in line with that in PPG 2 on Green Belts. Paragraph 13 sets out the circumstances where development of an MSA might be acceptable and the tests that should be met:

> *"One of the material considerations which could justify an exception could be the lack of any signed MSAs. The greater the interval between the proposed site and any existing facility the more weight should be placed on the needs of motorway users. Developers should bear in mind the sensitive nature of Green Belt sites and avoid them where possible. Where no alternatives are readily available, developers will be expected to take great care to mitigate the likely impact of the development."*

4.18 The analysis of strategic constraints has established that any new MSA on this stretch of the M4 should be located between a point beyond the weaving distances from Junction 8/9 and Junction 10, or off-line at Junctions 6, 7 or 8/9, the whole of this section of the M4 is within the Green Belt. Land adjoining the motorway which is not in the Green Belt has already been developed and also MSAs in urban areas are precluded by Policy GB11 of the Local Plan.

4.19 There are therefore no "readily available alternatives" to a Green Belt site. Any proposal for a new MSA on the M4 between the existing MSAs at Heston and Reading (Theale) which is acceptable in spacing and safety terms to the Highways Agency will have to be in the Green Belt.

4.20 With the Green Belt extending the full length of this section of the M4 and a demonstrable need for additional services it can be concluded that exceptional circumstances exist to warrant a departure from normal Green Belt policy. It is relevant to consider the M25 at the same time as the M4 and to note that all of the M25 is also contained within the Green Belt.

4.21 On the identified stretch of the M4, it will therefore be necessary to assess the particular alternative site options identified (below) with regard to their sensitivity in Green Belt terms in order to determine whether a better alternative exists to the planning application site at Junction 8/9.

Assessment of Alternative Sites

4.22 The strategic constraints determine the general locations for an MSA on the identified section of the M4 between Heston and Reading MSAs. Specific areas alongside the M4 are examined in more detail below to identify land which might provide suitable alternative sites. This assessment is undertaken by examining potential locations progressing in direction from west to east, initially for on-line facilities and then off-line sites at Junctions 8/9, 7 and 6 to the east of the application site.

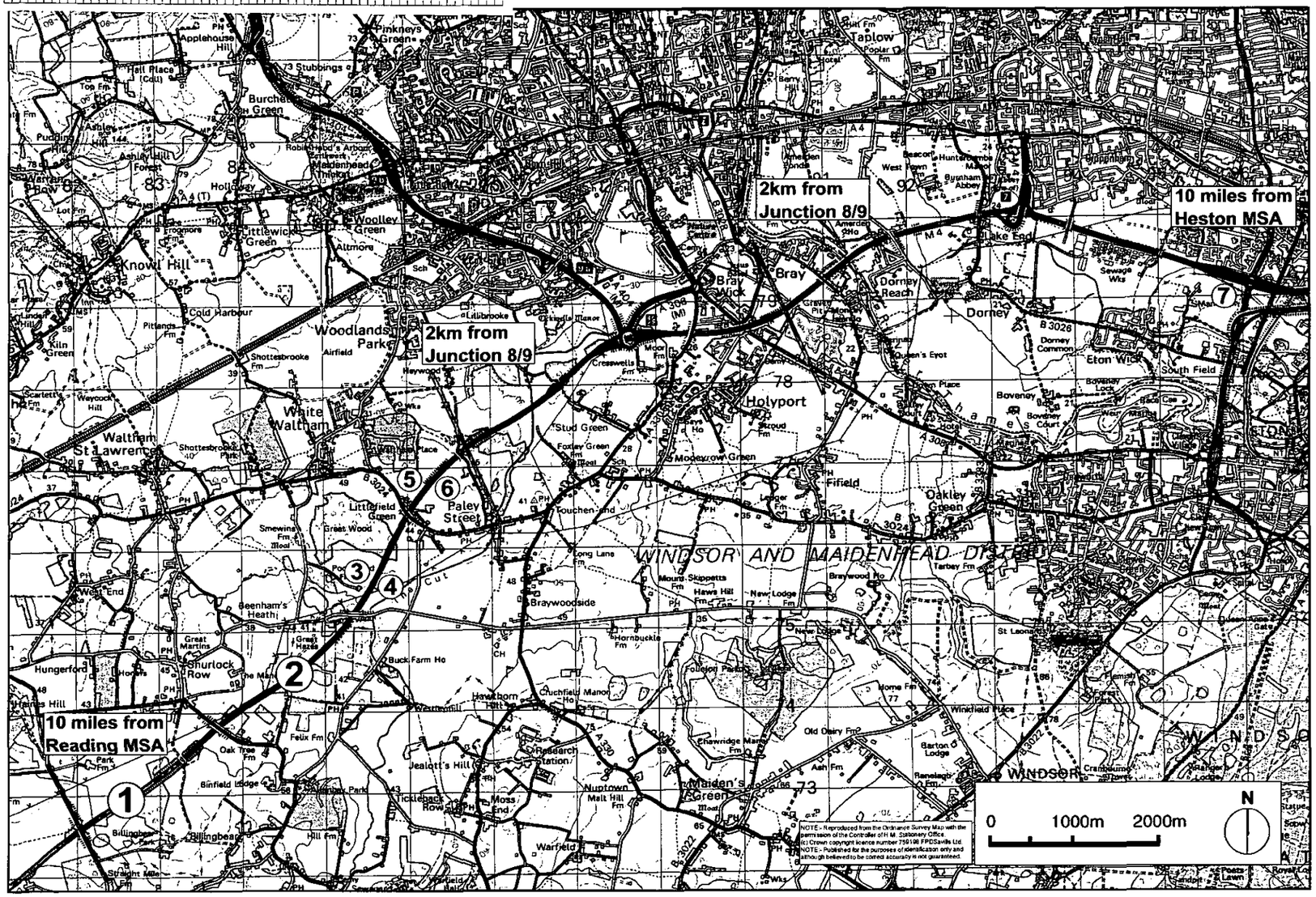


Figure 7: Alternative Sites

On-Line Sites

4.23 To the west of Junction 8/9 the strategic constraints determine that any alternative site should be between the respective weaving distances from Junctions 10 and 8/9. Any site on this length of the motorway will have to be an on-line site, accessed direct from the motorway via a slip road.

4.24 A number of criteria have been identified in order to appraise those sites which may provide an alternative to the application site. These criteria reflect both technical requirements as well as having regard for Local Plan policies and environmental considerations.

4.25 An on-line MSA requires a significant length of frontage to the motorway in order to accommodate the slip roads providing access to and egress from the site. The minimum length of frontage required, assuming that the land adjoining the motorway is the same as the level of the carriageway, is some 720 metres, therefore, a site must have an unobstructed frontage to the motorway of at least 720 metres.

4.26 Land adjoining this stretch of the M4 is occupied by significant woodland areas, including designated Ancient Woodland. The Local Plan places great importance on the retention of existing trees in the District, Paragraph 2.2.22 of the Adopted Local Plan states:

> *The importance of tree cover in contributing towards the quality of environment in the Borough cannot be overemphasised. ...The Borough Council will seek to preserve and enhance the existing tree cover through the use of development control and making Tree Preservation Orders.*

4.27 Certain woodland areas along this length of the motorway are given additional protection as Wildlife Heritage Sites in the Local Plan under Policy N9 which states:

> *In considering development proposals affecting local nature reserves and wildlife heritage sites, the Council will have particular regard to the need to protect natural features and the availability of mitigation measures. Measures will be required to safeguard and enhance wildlife heritage sites included within any development proposals.*

4.28 Taking into account the need for sufficient frontage to the motorway and the need to avoid sites specifically protected under Policy N9, in addition to the strategic constraints set out above, it is possible to identify six possible alternative on-line sites between Junctions 10 and 8/9. Some of these are not capable of serving west bound traffic, but have been identified because MSA schemes have previously been proposed.

Option 1

4.29 Option 1 is beyond the 2km (1.2 miles) spacing east of Junction 10 and is therefore at the spacing limit which is acceptable in highway safety terms. Warren Copse is designated in the Adopted Local Plan as a Wildlife Heritage Site which lies in the Green Belt.

4.30 The site and its surroundings are wholly rural in character, with the exception of the M4 itself. The development of an MSA in this location would therefore have a very significant impact on the character of the local landscape. This impact would be more substantial than at the application site which dies not have woodland and is in a location with the urbanising effect of the elevated Junction 8/9.

4.31 Development of an MSA in the Option 1 location would be a significant adverse intrusion into what is a largely unspoilt rural area. The loss of trees and hedgerows which would result from the development would be contrary to the Local Plan and detrimental to this attractive and distinctly rural part of the Green Belt. These factors and the fact that a site north of the M4 is not suitable for serving westbound M4 traffic rules out this location. Land to the south is inappropriate due to the loss of woodland designated as a Wildlife Heritage Site in the Local Plan.

Option 2

4.32 This option is located to the north of the motorway, the site is currently in use as commercial woodland, although on the margins some broad-leaved woodland is in existence. It has been considered only because of a previous planning application.

4.33 Part of the area of the site that fronts the motorway is a Wildlife Heritage Site. This area would be severely impacted by the construction of slip roads to and from the site, which would require the clearance of most of the woodland along the motorway frontage.

4.34 In addition to the Wildlife Heritage Site status, badgers are known to be active in this area. The site also contains protected species of reptiles. The presence of these species and the protection which is afforded to them by legislation places a further constraint on the development of the site.

4.35 Within the section of the woodland which is plantation, the length of frontage is some 700 metres which is not sufficient to accommodate slip roads. In order to construct the slip roads to a site in this location it would therefore be necessary to clear some of the broad-leaved trees on the margin of the plantation woodland, contrary to the aims of the Local Plan.

4.36 Development of the site to accommodate the main area of the MSA, the buildings and the parking areas would also require substantial clearance of the woodland. This would diminish any screening of the development by the trees and would mean that the amenity of properties adjoining the site along the minor road from Beenhams Heath could be adversely affected by the development.

4.37 The development of an MSA in this location would have a severe adverse effect on the Wildlife Heritage Site and on broad-leaved woodland. Additional factors also influence against selection of this site as a suitable alternative: the significant loss of woodland, the possible effect on adjoining properties. Also it is not suitable for serving westbound M4 traffic, unless slip roads could be constructed south of the motorway, this would however, have an adverse effect on an area of woodland. This option is therefore unsuitable for location of an MSA.

Option 3

4.38 Option 3 is north of the motorway, the site frontage extends between the overbridge carrying Drift Road and Great Wood which is protected under Local Plan Policy N9.

4.39 An area of land adjoining the motorway at this location is contained by woodland, which would largely screen the site to views from the north, south and west. This location is, however, open to views from the east, particularly from Drift Road and Howe Lane. Furthermore, within the defined area of the site is Pondwood Farm house and buildings. These buildings would all be within close proximity of the MSA, and may be affected by the development of an MSA.

4.40 Much of the surrounding woodland, including Great Wood and Pond Wood, is protected under Policy N9 for its ecological value. Great Wood is also a Wildlife Heritage Site. The development of an MSA in close proximity to this woodland may well have an adverse effect on the local fauna in these woodlands.

4.41 The area of land adjoining the motorway is divided by a series of hedges and by the course of a stream. The hedges and streams may act as wildlife corridors to and from Great Wood. Badgers are known to be active in the area and the site also contains protected bird species. Development of the site and consequent loss of hedges and the stream would be a significant wildlife impact.

4.42 As with option 2, this option and the surrounding area is rural in character with very little existing development locally. An MSA in this location would therefore be a significant intrusion.

4.43 The site is also constrained by the line of National Grid overhead power lines and a public footpath, which would either constrain the site layout or may require diverting.

4.44 The acknowledged wildlife value of the adjoining woodland and the value of the identified site as a wildlife habitat militates against this site as a suitable location for an MSA. The rural character of the landscape in this location is also sensitive to the effects of development. These factors and the fact that the site is not suitable for serving westbound M4 traffic rules out this location.

Option 4

4.45 This option is located alongside the westbound carriageway of the M4, 8 km (5 miles) to the east of Junction 10 and 4 km (2.5 miles) west of Junction 8/9. The site is sub-divided by field boundaries, comprising mature hedges and some small trees. A tributary of the River Thames known as The Cut, also crosses the site. The Cut and its associated hedges and trees form a locally valuable wildlife habitat. Other hedges on the site also link with the southern part of Great Wood and may serve as wildlife corridors.

4.46 The flat and open nature of the site leaves it open to views from surrounding settlements, notably Paley Street and potentially Bray. The site would also be visible from roads to the south and east and from the motorway overbridge, as well as from higher ground around the A 330 to the south east.

4.47 The site is also constrained by the presence of overhead power lines and a public footpath, which would constrain the site layout and may require diverting.

4.48 The pattern of trees and hedges in this location would necessarily be lost as a result of the development of an MSA, The Cut could be safeguarded, but measures would be required to prevent pollution of the stream.

4.49 Badgers are known to be active in the area. Protected species of reptiles and birds are also found on the site.

4.50 The nature conservation value of the site is a significant constraint on the development of the site. The loss of hedges, some trees and agricultural land, would be disadvantages of using this site. The presence of a MSA in this location would cause harm to the open undeveloped character of the area, while mitigation using screening would also be out of character with the surroundings. In addition, lighting would be an intrusive feature at night in an otherwise unlit area. These factors make this option unsuitable for serving westbound M4 traffic.

Option 5

4.51 This site adjoins the eastbound carriageway of the M4 and lies between the line of properties along Littlefield Green, adjacent to the B3024 overbridge, at the extreme of the weaving distance from Junction 8/9. This M4 frontage measures less than 800 metres and is therefore only just sufficient to achieve access to a possible site.

4.52 A significant slope in the land surface exists across the site, at the north eastern end of the site the motorway is some 4 metres above the adjacent ground level, which in general falls away from the motorway.

4.53 The difference in levels between the motorway and adjoining land may extend the length of frontage required in order to construct the egress slip road from the site, as well as requiring substantial earthworks. If all of the 800 metres is required, there is little opportunity to provide screening for properties along Littlefield Green.

4.54 This site is also crossed by overhead power lines, which would need to be diverted in order to facilitate the development of an MSA site.

4.55 Badgers are known to be active in the vicinity. If found to be present on the site, this would place a significant constraint on its development.

4.56 The western part of the site forms an attractive landscape of small scale fields with well developed hedgerows and groups of trees. The trees and hedges help screen the M4 from views from the west and north.

4.57 Development of this site would remove much of the vegetation on the site resulting in the loss of a valuable landscape amenity. It would also significantly open up views of the M4 from properties at Littlefield Green and the B3024.

4.58 The constraints over accessing the site, the significant landscape effects and the loss of mature trees and hedges on the site, are disadvantages to using this location. The possible presence of a protected species is also a significant constraint. These factors and the fact that the site is not suitable for serving westbound M4 traffic rules out this location.

Option 6

4.59 This site adjoins the westbound carriageway of the motorway. The length of frontage is defined by Littlefield Green and the 2km (1.2 miles) weaving distance from Junction 8/9 which extends as far as the route of the overhead power lines which cross the site. The distance between Littlefield Green and the power lines is only 600 metres. There is therefore insufficient length of frontage to accommodate MSA slip roads.

4.60 If access could be gained to the site, this would result in a substandard weaving distance from Junction 8/9. Such an arrangement is unlikely to be acceptable to the Highways Agency, given the very high volumes of traffic which are experienced on this section of the motorway.

4.61 In addition, the construction of an off-slip into the MSA would require the diversion of overhead power lines because the pylon for the lines is located immediately adjacent to the carriageway.

4.62 Badgers are known to be active in the vicinity of the site which could be a constraint on its development.

4.63 The site is part of an attractive rolling countryside of small fields and well developed hedgerows which help screen the M4 from the surrounding properties at Paley Street. Development of this site would remove much of the vegetation, with the consequent loss of a valuable visual amenity. Development of the site would also open up views of the M4 and this site from surrounding properties.

4.64 Owing to the substandard weaving distance which would result from the development of an MSA at this location, this option is regarded as unacceptable in highways terms. In addition, other factors including visual intrusion, loss of hedgerows and trees and presence of a protected species make this option unacceptable.

Off-Line Sites

4.65 The analysis of strategic constraints determined that any off-line option would be at junction 6,7 or 8/9.

Junction 8/9

4.66 In addition to the application site to the south of Junction 8/9, only the land north of the junction could provide an alternative site as land to the south east is within Holyport Conservation Area and land to the north west is dissected by a river and identified protected woodland. The northern side of the junction links with both the A404(M) and the A308(M). This arrangement means that no suitable location exists to accommodate an MSA or an access into it. Junction 8/9 can therefore be ruled out as the possible location for an alternative off-line MSA, apart from the application site itself.

Junction 7

4.67 The design of the junction is such that it is not possible for traffic to leave the motorway to access a site and then return to the motorway. Modifications to the junction to achieve such an access would be costly and complex. In addition the junction is constrained by existing development, as a result there is little room for modification to the junction to be achieved and include a site of adequate size for an MSA. For these reasons, analysis of Junction 7 shows that its configuration precludes an off-line MSA.

Junction 6

4.68 At Junction 6, the quadrants to the north of the motorway are already developed and could not therefore accommodate a new MSA. The south east quadrant of the junction is crossed by the A332 as well as a railway line, which leaves inadequate area for an MSA in this location. The only possible alternative site to the east of Junction 8/9 is in the south west quadrant of Junction 6.

Option 7 at Junction 6

4.69 This site, located in the south west quadrant of Junction 6, is in a very sensitive location in Green Belt terms. The site occupies a very narrow section of the Green Belt between Slough to the north and Eton to the south. The built up areas of Eton Wick, South Field and Eton are all excluded from the Green Belt and further define this narrow section of the Green Belt. Development of option 7 would therefore significantly diminish the undeveloped nature of the gap south of the M4. Similarly, development of the site would further erode the remnants of the historically rural setting of Eton and Windsor.

4.70 Creating access to the site would require significant alteration to Junction 6 roundabout, extending it southwards. The roads in this section are elevated in order to bridge Chalvey Ditch. A similar structure would therefore have to be constructed in order to access the site.

4.71 Due to the sensitive Green Belt location of this site and the significant difficulties associated with accessing the site, this option can be ruled out as a suitable site for an off-line MSA.

Conclusion

4.72 Examination of alternative sites shows that only one option exists for an off-line site capable of serving westbound traffic. This option (option 7) occupies a very sensitive location in the Green Belt which, jointly with the very difficult and expensive task of accessing such a site, rules the site out as a suitable alternative location. Of the off-line options, therefore, the application site is the best and only, possibility.

4.73 With alternative off-line sites having been discounted, the alternative is to identify suitable on-line sites in order to serve west bound traffic. The strategic assessment has identified 4 possible on-line sites, however, none is free from constraints, each having features which direct against development of an MSA. These factors include: impact on areas of acknowledged nature conservation value, loss of trees and important areas of woodland, visual impact, impact on properties in the locality and problems of substandard access or other highway safety aspects.

4.74 When compared with any of these alternative sites, the application site is the preferred option. As the assessment of the proposal demonstrates, the application site can be developed in a manner which minimises its impact on ecology and the landscape, including the Green Belt and there are no significant adverse impacts on other environmental issues.

PART FIVE LANDSCAPE AND VISUAL IMPACT

Introduction

5.1 The Landscape and Visual Impact Assessment has examined the landscape context and possible views of the proposed development from a range of publicly accessible viewpoints, roads and the motorway itself.

5.2 The nearest settlement to the site is the village of Holyport to the south east. The southern built edge of Maidenhead lies 1km to the north. An assessment has been made of the visual effect that the development might have on these settlements as well as on other scattered properties in the vicinity.

5.3 This section of the Environmental Statement includes a description of the methodology used, the site and its context, an appraisal of the effect on the viewpoints and the effect on landscape character.

5.4 It should also be noted that this assessment has been made in the light of the previous Landscape and Visual Assessment that formed part of the July 1995 Environmental Assessment for an MSA on the current site, and much of its findings are therefore very similar.

5.5 However, 5 years have elapsed since that study was carried out, and in landscape terms the site, and particularly its immediate context has changed to some degree. Whilst the built environment has remained largely unaltered, vegetation has grown noticeably, and particularly the planting associated with the M4 motorway. Although well established at the time of the previous assessment, it has grown and matured significantly, and this can be seen in several of the photographs. Obviously the effect of this has been to increasingly screen and filter views from and towards the motorway, as intended in its design, and this has also affected a number of views towards the site.

5.6 It should be noted that this proposal has only been assessed with the trees in almost full leaf (early October) and not in winter. However the general winter effect was studied in detail at the time of the previous application and in preparing evidence for the subsequent Public Inquiry, therefore it is only the winter effect of subsequent additional growth that has not been assessed.

The Development Concept

5.7 Although the planning application is only in outline, an illustrative design for the scheme has been prepared. This has derived from a consideration of several layout options and from an assessment of the following factors.

- Site analysis, including topographical and vegetation analysis;
- Access arrangements and parking requirements;
- Accommodating the range of facilities necessary for this type of development; and
- The philosophy of designing a facility which can be well landscaped and of high quality.

Scheme Content

5.8 The site has been laid out to achieve a practical, easily understood and attractive scheme. The layout responds to the site characteristics and the findings of the site analysis. Careful consideration has been given to the siting of the buildings, forecourt and parking areas, as well as the landscape treatment in relation to both the locality and the proposed development.

5.9 Access to the MSA is gained from the existing raised interchange at Junction 8/9, in the north eastern corner of the site. The various elements of the proposal are arranged in a clear and logical sequence around the site.

5.10 Within the development, clear pedestrian routes to the main buildings and a generous pedestrian area outside the Amenity Building will be provided. A children's play area will be situated in close proximity to the Amenity Building. A picnic area will also be included within the site.

5.11 The whole internal area of the MSA would be generously planted with trees and shrubs, with a proportion of extra heavy stock to provide immediate effect and particularly in those places where there are gaps in the existing hedgerows.

5.12 The whole site would be capable of being built to a high standard of hard and soft landscape design and treatment to make it an easy-to-use, attractive and restful environment.

Methodology

5.13 The landscape assessment has been carried out with close reference to the following documents:

- Landscape Assessment Guidance - Countryside Commission (1993)
- Environmental Assessment, The Treatment of Landscape and the Countryside Recreation Issues – Countryside Commission 1991
- Guidelines for Landscape and Visual Impact Assessment - The Landscape Institute and The Institute of Environmental Assessment, 1995.

In addition to the written appraisal, map based methods have been used for recording and presenting the survey, analysis and proposals, photographic material has also been included.

5.14 The application site has been visited during both summer and winter months over a number of years, its nature and visibility have been assessed in terms of both its existing visibility and also in terms of the proposed development on the site. This has included consideration of seasonal differences and the effect over a period of time as the planting matures.

5.15 A clear understanding of the nature and character of the landscape of the application site and surrounding area has been gained. This was achieved by a combination of site visits and desk studies.

5.16 On the foundation of a sound and thorough survey and analysis of the site and the surrounding landscape, it was possible to develop a clearly reasoned and sensitive approach to the design brief. This has been developed within a framework of conservation and landscape enhancement considerations.

5.17 The various landscape related planning policies affecting the site and its surroundings have been fully considered, notably the Green Belt and adjoining Conservation Area designations.

5.18 The result of this structured process is a scheme that responds to its location and setting, bringing with it several enhancing features.

Topography

5.19 The topography of the area is very gentle, Figure 8 (Page 13) with the principal feature of the local area being the River Thames. The site is situated in the bottom of a very shallow valley of a small tributary of the Thames – The Cut – and this passes close to the site, just north of the M4 motorway.

5.20 There are no noteworthy hills in the area and the ground rises very gradually and almost imperceptibly to the west and south. Just north of the site and The Cut, the land rises slightly more steeply between Cox Green and Bray Wick. This is the only location where views towards the site are appreciably influenced by variations in the landform, as elsewhere the landform is essentially flat.

Footpaths and Bridleways

5.21 There are no footpaths or bridleways crossing the site.

5.22 Between the site and Holyport/Stud Green is an area of closely related footpaths, well used by local residents. One footpath passes within a few yards of the south east corner of the application site at Cresswells Farm.

5.23 An unofficial path has been established to the immediate south of the site in order to rationalise the footpath network in this area. The adjoining footpaths are all marked with the standard yellow arrows.

5.24 Other public rights of way exist to the north of the site and the M4 motorway, connecting to Cox Green and Ockwells park. Public footpaths are shown in the attached plan.

The Site and Surrounding Area

5.25 The application site covers two fields of some 13 hectares to the south and south west of Junction 8/9. The fields are of a generally flat, open character, but they rise very slightly to the centre. The two fields are divided by a hedgerow that contains mostly shrub species, but also some oak trees, none of which are large.

5.26 Apart from the settlements and scattered dwellings, land use in the locality of the site is mostly agricultural consisting of both arable and livestock farming.

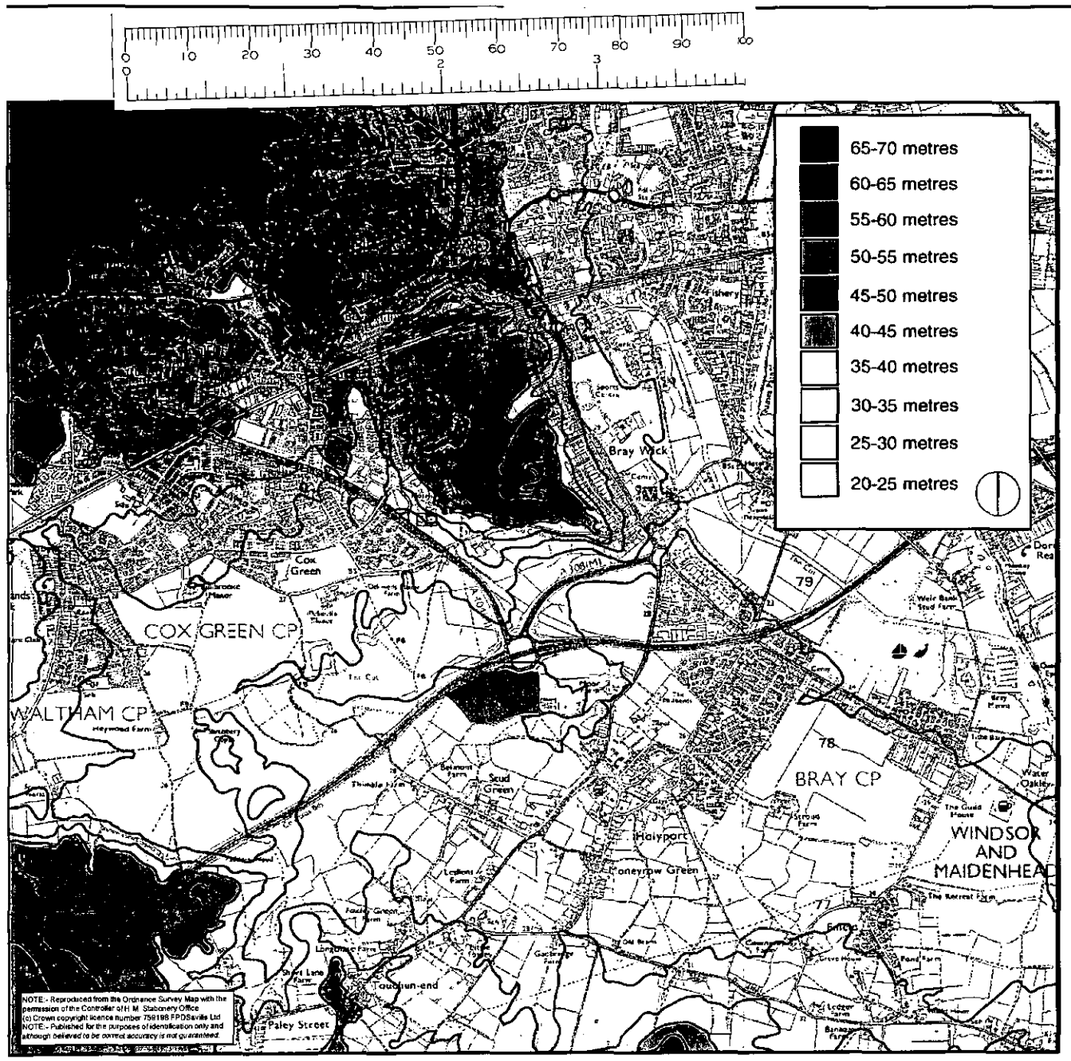


Figure 8: Topography

5.27 The area around the application site is generally well treed and there are several mature woodlands particularly in the area to the west of the motorway junction.

5.28 The fields between the site and Holyport are relatively small with well established hedgerows defining the field edges. The hedges contain numerous trees which give the area an enclosed and well treed character.

5.29 *The effect of tree cover in the area has an* important influence on views, and this will be considered later in the assessment.

Views

5.30 Views of and towards the application site can be divided into three basic categories as follows;

- Close range views from 0.5km and less
- Medium range views from between 0.5km and 1km from the site
- Views from the M4 motorway and Junction 8/9

Close Range Views

5.31 Close range views of the application site are limited to the area south of the site.

5.32 The topography in the area to the south of the site is nearly flat and with the high incidence of hedgerows in the area, the low sight-lines are rapidly obscured by intervening vegetation. There are therefore no views of the site from houses on the edge of Holyport.

5.33 There are several footpaths across the fields immediately to the south of the site as well as a *recent track that abuts the site boundary.* The close range views from these paths look directly towards the overgrown hawthorn hedge along the site boundary (Viewpoint 5), although the main aspect is across the field to the south. The hedge *is mostly dense, particularly in summer.*

5.34 There are also more interrupted views from the footpaths and bridleway to the west in the area of Belmont Farm. There is a view from the M4 bridleway overbridge (Viewpoint 9), but this is now largely screened in summer by emerging vegetation along the side of the motorway.

5.35 Although Stud Green lies about 0.5km from the site, the density of intervening vegetation is almost certainly sufficient to screen views of the site from these properties. During the earlier Public Inquiry, views from private properties were closely examined, but none became apparent from Stud Green.

5.36 Belmont Farm itself has partial and filtered views of the site. (Viewpoint 8)

Medium Range Views

5.37 Medium range views are limited to just a few viewpoints in the area to the north of the site. There are no medium range views of the site from the south owing to the density and occurrence of hedgerows in the area.

5.38 Several blocks of mature and well established woodland exist in the vicinity which are very effective in preventing views of the site, particularly from the low-lying ground to the north-west. However it would appear that some clearance of vegetation has opened up views from a section of bridleway near Ockwells Manor *(Viewpoint 10). It is now possible to see traffic on* the motorway over a short section between two woods, but all of the proposed development area is concealed from view behind an intervening wood.

5.39 *There are also substantial earthworks that* are part of the elevated Junction 8/9 and, at 5.5m above the site, they are also effective in screening views from the north and north-east.

5.40 Rising ground to the north of the site in the area between Cox Green and Bray Wick facilitates views towards the site. These views are mostly limited by the height and extent of the junction earthworks and vegetation. Views towards the site have become increasingly obscured by vegetation since the earlier landscape assessment, as it was anticipated, and the former glimpse of the site in *Viewpoint 13 is now obscured in summer.*

Views from the M4 Motorway and Junction 8/9

5.41 There are potentially wide views across the whole of the site from the southern side of the *elevated junction. However planting, mostly* hawthorn, reduces these views particularly during summer. As the planting is still relatively young, it will become increasingly effective in reducing views further.

5.42 On the northern boundary of the site at the lower part of the slip road there is very little planting between the site and the M4 motorway. At this point, clear views exist across the site.

5.43 The site is more open to view for the east bound traveller. The hedgerow along the western boundary of the site becomes visible once the motorist has passed beneath the bridleway overbridge north of Thimble Farm and the site itself becomes increasingly visible as the site is approached.

5.44 The west bound traveller has a slightly more limited view of the site as dense intervening vegetation to the east and the embankments of Junction 8/9 limit views as the site is approached.

Summary of Views

5.45 The main factors affecting views can be simply described as follows;

- Views from the north and east are limited by several blocks of mature woodland and by the raised earthworks of Junction 8/9. Rising ground between Cox Green and Bray Wick and a footbridge over the A404(M) *provide a few slightly elevated viewpoints* that look towards the application site. The woodland and junction earthworks are of sufficient height to screen these views.

- *Views from the south and west are obscured* by a series of well established hedgerows. This area contains a number of footpaths and those closest to the site are largely obscured by an overgrown hawthorn hedge along the southern boundary.

- Views from slightly further away are rapidly obscured by the amount of intervening vegetation and the site is not therefore visible from houses on the edge of Holyport.
- There are potentially wide views across the

site from the elevated motorway junction and west bound slip road, particularly with the removal of vegetation on the embankments, made necessary by the addition of new slip roads into the site. However the embankment will have additional mitigation measures, described under the mitigation section, that will ensure that views from cars continue to be obscured.

5.46 It is concluded that the site is very discrete in views from surrounding areas, and that the site has become somewhat better screened through the further growth of vegetation since the previous assessment was made in 1995. However some filtered and limited close range views into and towards the site were identified that would need additional landscape mitigation to minimise the effect on local views and amenity.

Landscape Character

5.47 Although the site is open and undeveloped and is situated within Green Belt, its character, and that of its locality are significantly influenced by various forms of development and activity.

5.48 Some development is hard or urban in character, such as the motorways and their associated structures, and the electricity lines that cross the area. Other development is softer in character, but it nonetheless collectively contributes to the sense of nearby urban areas. Examples of this are the golf course at Bray Wick, horse grazing and the turf stripping that takes place on and around the site. In addition to these influences, there is a high level of activity in the area, notably in the form of busy roads and their associated noise, as well as aircraft approaching and taking off from Heathrow Airport.

5.49 The site and its surrounding area is not therefore truly rural in character, but it is of what might be defined as of quasi-rural character. The Green Belt undoubtedly plays an important role in controlling development and in therefore retaining an essentially open character, but nonetheless there is a strong sense of a nearby conurbation and of change in the landscape. The result has been to create a landscape that is no longer truly rural, but somewhat ambiguous in character.

Assessment of Visual Effects on Selected Viewpoints

5.50 This section examines in detail a sample of the viewpoints of the site. It should be noted that these viewpoints are not truly representative insofar that views towards the site cannot normally be obtained. The viewpoints selected illustrate the most open views that were found from publicly accessible locations.

Definition of degrees of impact

5.51 There is no standard methodology for the quantification of the magnitude of relative impacts, but the method used in this instance has been adapted from example values given in the "Guidelines for Landscape and Visual Impact Assessment". The six classifications of the degree of impact that have been used in this study are as follows:

None	No part of the development, or work or activity associated with it, is discernible.
Negligible	Only a very small part of the proposals is discernible and/or the proposals are at such a distance or so limited in view that they are scarcely appreciated. Consequently they have very little effect on the scene.
Slight	The proposals constitute only a minor component of the wider view, which might be missed by the casual observer or receptor. Awareness of the proposals would not have a marked effect on the overall quality of the scene.
Moderate	The proposals may form a visible and recognisable new element within the overall scene and may be readily noticed by the observer or receptor.
Substantial	The proposals form a significant and immediately apparent part of the scene that affects and changes its overall character.
Severe	The proposals become the dominant feature of the scene to which other elements become subordinate and they significantly affect and change its character.

5.52 It should be noted that these definitions can apply to either existing or proposed situations and that impacts need not necessarily be detrimental. For example, a prominent group of trees might have a 'Substantial' impact, but the effect on the landscape and views would be beneficial.

5.53 The assessment of impact for each view is undertaken at three stages, namely:

- During construction
- During the first year after completion (summer and winter)
- During the fifteenth year after completion (summer and winter)

5.54 The latter date represents a point at which the landscape has established and should have reached a reasonable degree of maturity. Deciduous trees, planted as forestry whips can be expected to achieve a height of about 7.0m in height under normal growing conditions.

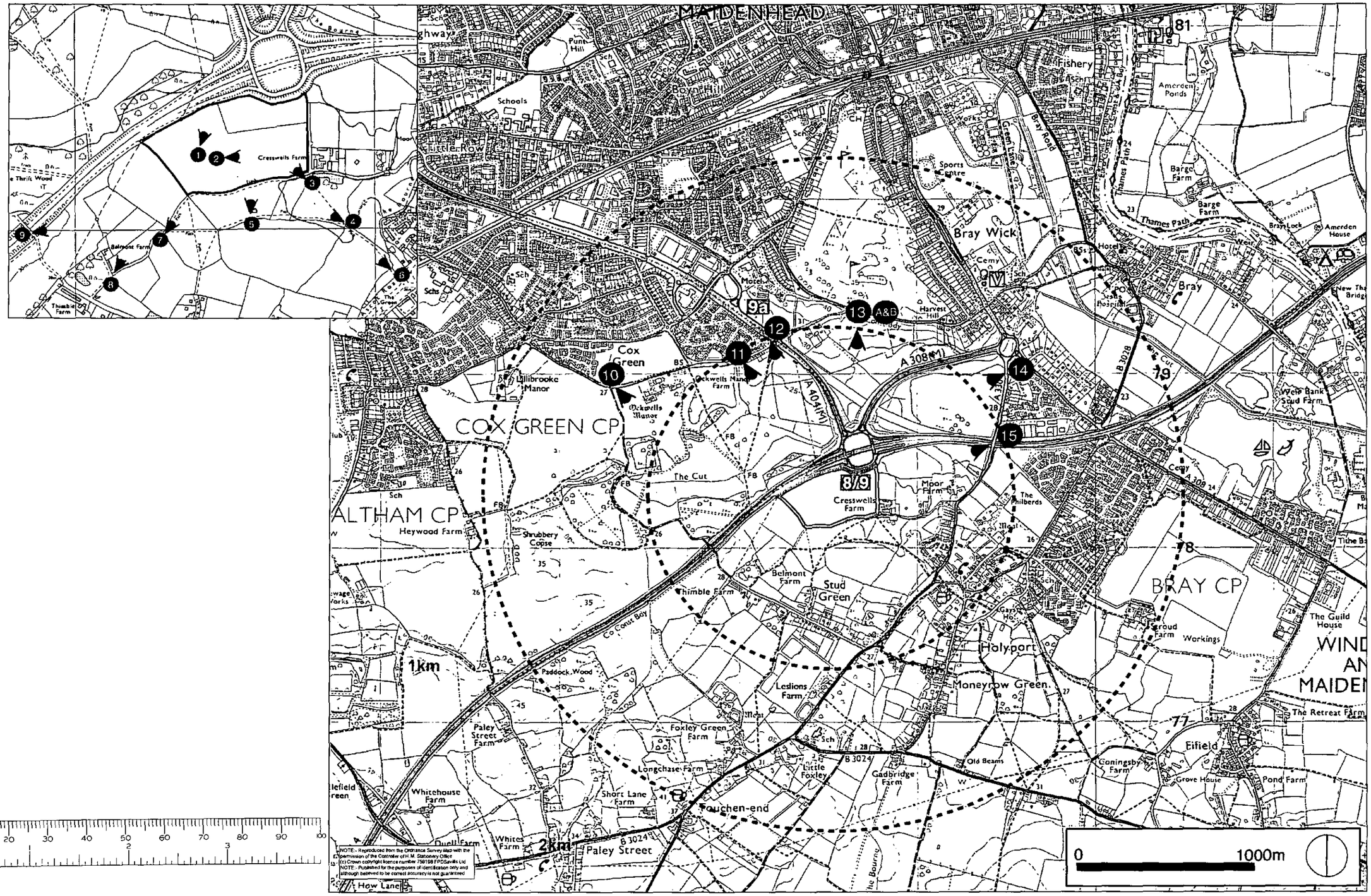


Figure 9: Location of Photographic Viewpoints

Viewpoint 3
Looking north-west from Footpath 1 near Cresswells Farm

Description
5.55 This view looks towards the site at a distance of about 30 metres from the extreme south-east corner of the site which appears on the right of the view. The site extends across the view, and the hedge along its southern boundary can just be seen in the middle distance beyond the foreground hedgerow and gate.

5.56 Reference to the photograph shows that in summer the site is fully and effectively screened because of the density of the vegetation. In winter there are some very limited and filtered glimpses towards and beyond the site through the mass of branches and twigs in the hedgerows. Planting on the far side of the site can be indistinctly seen, as can moving vehicles on the Junction 8/9 embankment.

Effect of the Proposals
5.57 In summer the proposals will have no effect on this view because of the effectiveness of the existing screening.

5.58 In winter it may just be possible to discern the upper parts of the roofs of the Amenity Building and Lodge through the hedge and above the proposed screen mounding beyond in the centre of the view.

5.59 On the extreme right of the view, where there is currently a limited glimpse into the site in winter, screen mounding will prevent any view of either the existing junction or the new access road into the site. The proposals would indeed have a beneficial effect on this view in winter insofar that it would prevent existing glimpses of vehicles moving around the junction and along the motorway.

5.60 Dense new woodland planting up to 70 metres in width would be planted immediately beyond the hedge along the southern boundary of the site. Initially the planting would itself be concealed behind the existing hedges, but in a few years it would gradually emerge above the height of the site boundary hedge to create a well treed backdrop.

5.61 *Assessment of Impact*

During construction	**Slight**
Year 1	
Summer	**None**
Winter	**Slight**
Year 15	
Summer	**None**
Winter	**Negligible**



Figure 10:
Viewpoint 3 - Looking north-west from Public Footpath No.1 adjacent to Cresswells Farm

Viewpoint 5
Looking north from Footpath 6, west of Cresswells Farm

Description
5.62 This view looks directly towards the site and the hedgerow along its southern boundary which stretches across the photograph.

5.63 In summer the hedgerow makes an effective screen against the site and the motorway and junction beyond, although lamp columns around the elevated junction can be seen on site in the centre of the view between the foreground fence and the pond. (The lamps are too small and distant to discern in the photograph) Excavations from an irrigation pond on site also block views through a gap in the hedge at the end of the double fence situated behind the foreground bush in the photograph.

5.64 In winter there are filtered views through the hedgerow across the site towards the M4 and Junction 8/9, and moving traffic is a discernible feature of the scene.

5.65 The transmission tower to the left of the photograph is situated close to the northern boundary of the site. The roofs of buildings at Cresswells Farm can be seen on the extreme right of the view.

Effects of the Proposals
5.66 The development would occupy the field on the far side of the hedgerow. The car and coach parking areas would be situated on the left part of the view, with the Lodge and Amenity Buildings located on the extreme left of the view. The Fuel Filling Station and HGV parking area would be situated in the centre of the view below the elevated motorway interchange.

5.67 There would be no development in the area of the site beyond the foreground pond, and it can be appreciated from this view that although the site extends up to the boundary of Cresswells Farm, there will be a significant margin of undeveloped space retained between the farm and the development.

5.68 An uninterrupted margin of earth shaping and woodland planting will be maintained along the southern boundary of the site immediately beyond the hedgerow. In summer the whole development will be screened from the outset by the existing hedgerow and remodelled excavations opposite the gateway. The only exception would be the uppermost part of the Lodge roof and the top of some lighting columns on the access road where it swings towards the site boundary. These might be seen just above and within the lower parts of the outline of the hedgerow in the centre of the view.

5.69 In winter, the planted 2.0 - 2.3m high earth shaping will be glimpsed through the hedge, screening lower parts of development within the site, including parked cars, and traffic on the motorway to the left of the view, and including headlights at night. Only the upper parts of the buildings and the lighting columns will be slightly more visible during the winter months because they will be partly visible through the existing hedge.

5.70 Again, in time the new planting will become denser as it establishes, adding significantly to the screening in winter by virtue of the density and depth of branches and twigs, and after a few years it will begin to emerge above the existing hedgerow to create the appearance of a woodland edge.

5.71 *Assessment of Impact*

During construction	**Moderate**
Year 1	
Summer	**Negligible**
Winter	**Slight**
Year 15	
Summer	**None**
Winter	**Negligible**

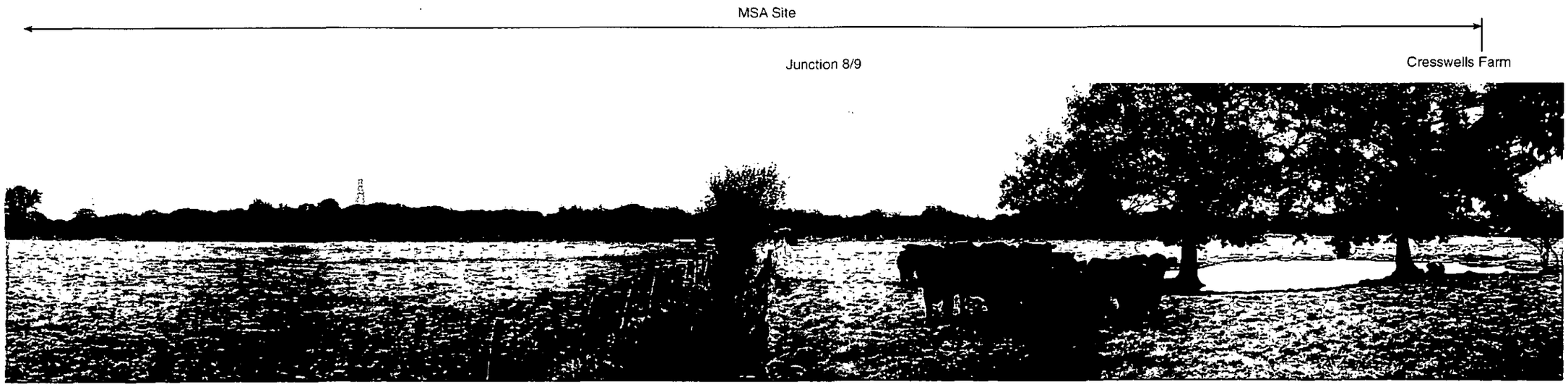


Figure 11:
Viewpoint 5 - Looking north from Public Footpath No.6 west of Cresswells Farm

Viewpoint 9
Looking north-east from the bridleway over the M4 motorway

Description
5.72 The M4 dominates the view on the left of the photograph. Woodland to the north of the motorway can be seen on the extreme left, stretching towards Junction 8/9 which is partly obscured by intervening trees.

5.73 The southern part of the site extends towards the large electricity pylon in the centre right of the view, but the site itself is all but concealed by intervening vegetation. The proposed nature conservation area occupies a field situated behind the trees on the southern side of the motorway extending from the centre of the photograph to the right.

5.74 The growth of young trees along the side of the motorway has been significant in recent years, all but concealing the site from view during the summer months of 2000. In winter, more of the site becomes visible, but the mass of twigs increasingly reduces the degree of visibility.

Effects of the Proposals
5.75 The northern part of the site to the motorway would be occupied mostly by the Amenity Building and Lodge, the car park and Fuel Filling Station, as well as the landscape margin along the motorway boundary.

5.76 From the outset, during the summer months, hardly any of the development would be visible because of the screening formed by the existing hedgerow along the western boundary of the site and the nearer trees along the motorway margins. Only some of the uppermost parts of the Amenity Building and Lodge roofs would be seen where gaps occur. In winter, there would be partial views of the development through branches. The southern part of the development would be better screened by intervening vegetation than the northern part. Nearer the motorway, the Amenity Building would be visible, with the car park concealed behind it, but the Lodge would be better screened by the existing hedgerow along the western boundary of the site.

5.77 Dense new woodland planting in the nature conservation area would add to the winter screening of the development because of the mass of additional twigs and branches, and in time this would be sufficient to all but, if not completely, conceal the development from view.

5.78 ***Assessment of Impact***

During construction	**Moderate**
Year 1	
Summer	**Negligible**
Winter	**Moderate**
Year 15	
Summer	**None**
Winter	**Negligible**

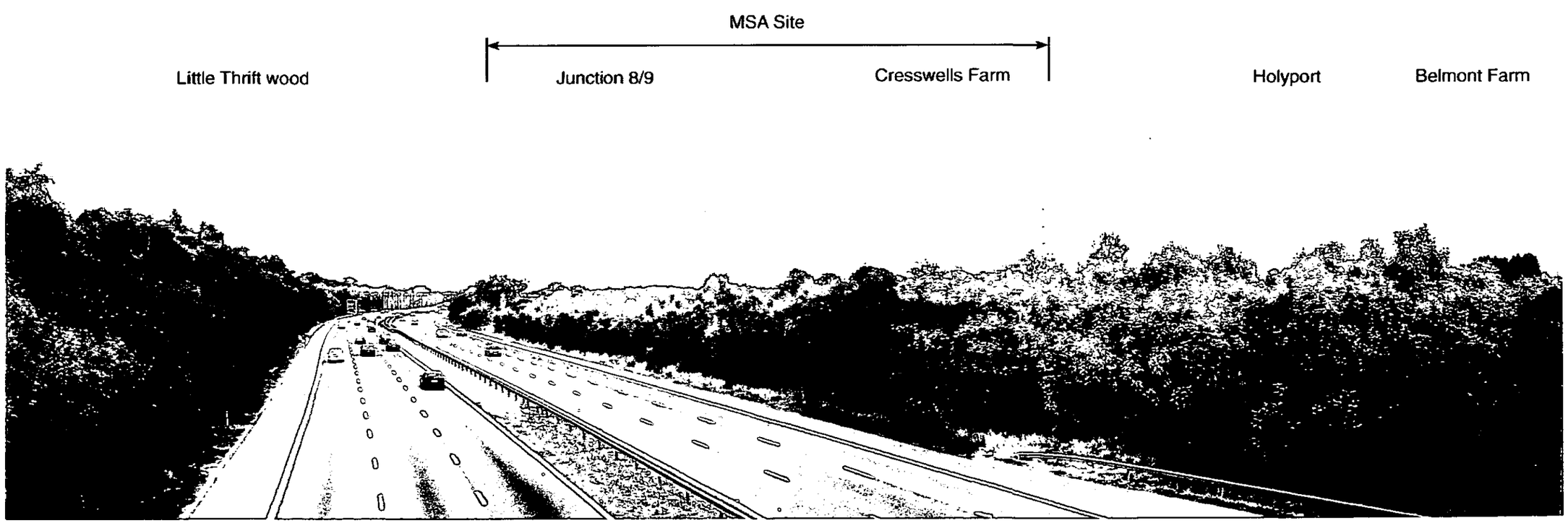


Figure 12:
Viewpoint 9 - Looking north-east from the bridleway over the M4 motorway

Viewpoint 13
Looking south from the minor road between Cox Green and Bray Wick

Description
5.79 The viewpoint is situated in a gateway on the road where it reaches the summit of the hill. A roof of a private house can be seen on the extreme right of the view. The road provides intermittent glimpses to the south through a roadside hedgerow. The direction of view relative to the road means that it is west bound motorists only who look in the direction of the site, which is situated immediately beyond and to the right of the junction

5.80 To the centre right of the view the A308(M) can just be seen ascending towards Junction 8/9 and beyond that the roof of a large barn at Cresswells Farm catches the light. The woodland on the north side of the motorway opposite the site can be seen on the extreme right of the view between the middle foreground lamp posts that illuminate a tennis court, situated behind the line of evergreen hedging.

5.81 It should be noted that this view has changed quite markedly since the earlier assessment was carried out. Apart from the foreground trees having grown significantly, the trees planted around Junction 8/9 have also grown, concealing the site wholly from view.

Effects of the Proposals
5.82 The effect of the proposals on this will be very limited.

5.83 The principal effect on this view, such as it would be, will be of the additional lighting columns on the access road leading from the elevated junction into the site. These will be seen as additional to those that already exist around the junction and they will not therefore introduce any new feature into the view. It should be noted that most of the new lighting columns would be at a lower level than those on the elevated junction itself because the access road descends into the site.

5.84 The Fuel Filling Station will be concealed beyond and below the elevated junction and its associated planting. The Amenity Building and Lodge will similarly be mostly screened from view, but the upper parts of their roofs may just be discernible beyond and through the foreground tree on the right and above trees on and around Junction 8/9 during the winter months. However as the existing planting continues to grow, they would disappear from view altogether within a few years.

5.85 None of the site area is currently visible, and therefore none of the parking areas will be visible.

5.86 *Assessment of Impact*

During construction	**Negligible**
Year 1	
Summer	**Negligible**
Winter	**Slight**
Year 15	
Summer	**Negligible**
Winter (effect of lighting columns only)	**Negligible**

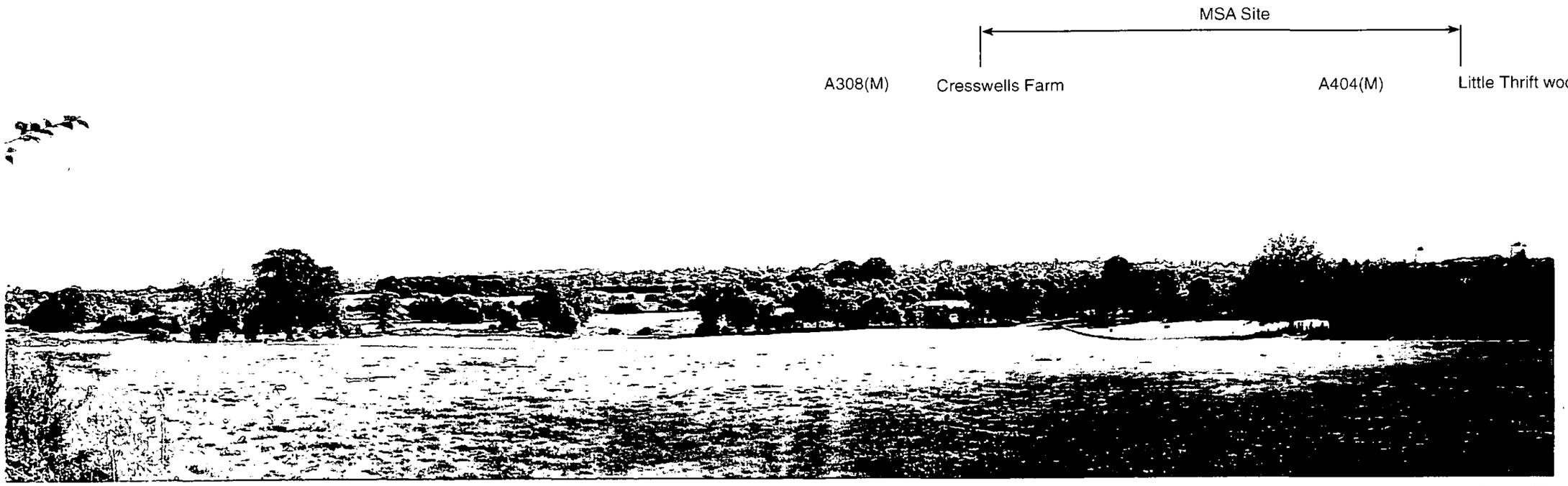


Figure 13:
Viewpoint 13 - Looking south from the minor road between Cox Green and Bray Wick

Viewpoint 15
Looking west from A330 motorway overbridge between Bray Wick and Holyport

Description
5.87 This slightly elevated view looks directly towards Junction 8/9 along the line of the M4. The small wood to the north of the motorway, opposite the site, is seen above and to the left of the junction slip road in the centre left of the view. Cresswells Farm is situated on the left of the view, but cannot be identified within the mass of vegetation.

5.88 The MSA site is situated to the left of the motorway junction, and a small bright green part of it can be seen through a break in the hedgerow between and below the two transmission towers in the centre left of the view.

Effects of Proposals
5.89 The principal feature on the eastern side of the development will be the access road that descends to the site from the elevated junction.

5.90 In the first years this would appear as a grassy slope planted with young trees, and it would be seen through the narrow gap in the hedge along the eastern boundary of the site where the bright green glimpse is seen in the photograph. In addition to the screening properties of the existing hedgerow (this is in fact a double hedgerow situated on either side of a former track) the ramp would also act as a screen against views of lower parts of the development beyond.

5.91 Until the planting on the embankments of the new access road becomes established, there will be some sight of traffic entering and leaving the site on the access road, although even when first opened, this will be restricted by the existing hedgerow.

5.92 The new light columns along this section of access road near to the junction will also be visible, however it should be noted that the access road and light columns would supplant a more distant glimpse of traffic and lighting on the M4 itself. Low lighting columns of only 2 metres in height will be used on the access ramp, further reducing lighting impact. In the context of the extent and prominence of existing traffic and lighting on the M4 itself, the elevated junction and slip roads, the effect of the new access road will be limited.

5.93 The parking and circulation areas within the site will be screened from the outset by the existing vegetation between the observer and the site that forms a partial screen even during winter months.

5.94 It will be possible to see a small part of the Fuel Filling Station roof and the Amenity Building and Lodge roofs beyond, but their effect will be similarly slight, particularly with a careful choice of roof material.

5.95 In due course the new planting on the access road embankment will screen the roofs and traffic on the slip road.

5.96 *Assessment of Impact*

During construction	**Slight**
Year 1	
Summer	**Slight**
Winter	**Moderate**
Year 15	
Summer	**Negligible**
Winter (effect of lighting columns only)	**Negligible**

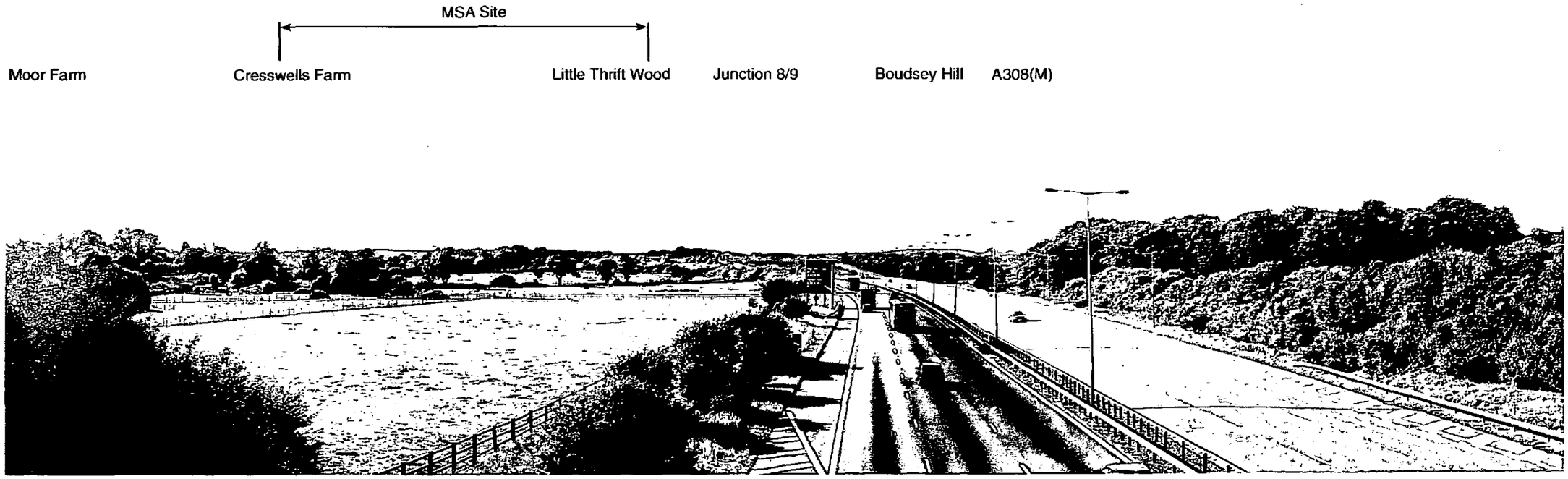


Figure 14:
Viewpoint 15 - Looking west from A330 motorway overbridge between Bray Wick and Holyport

Mitigation

5.97 A number of beneficial mitigation measures can be employed to minimise the visual effect of the proposals. Some of these measures would prove to be effective from the earliest phases of construction whilst others would become increasingly effective over time. In due course, the effect of these measures will be to make the development very discrete in the wider landscape.

Site layout

5.98 The study of views towards the application site from surrounding areas reveals that some parts of the application site are more visible than others. Influencing factors are the direction of views, topography, vegetation and existing embankments around the site. The larger elements of the scheme, the Amenity Building, the Lodge and the Fuel Filling Station, have been located with this in mind.

5.99 All buildings are sited well away from the more sensitive southern and western boundaries. The Amenity Building and the Lodge have been placed in the north central part of the site, and the Fuel Filling Station has been placed towards the north-eastern corner of the site where it will be largely screened by the Junction 8/9 earthworks to the north and the new access road embankment to the east. The canopy of the Fuel Filling Station will be at about the same level as the Junction 8/9 elevated roundabout.

5.100 The location of the buildings close to the motorway and junction also respects the sensitive Green Belt location of the site by minimising the extent of development away from the roads, and the buildings, access roads and parking areas are also situated well away from listed buildings at Cresswells Farm.

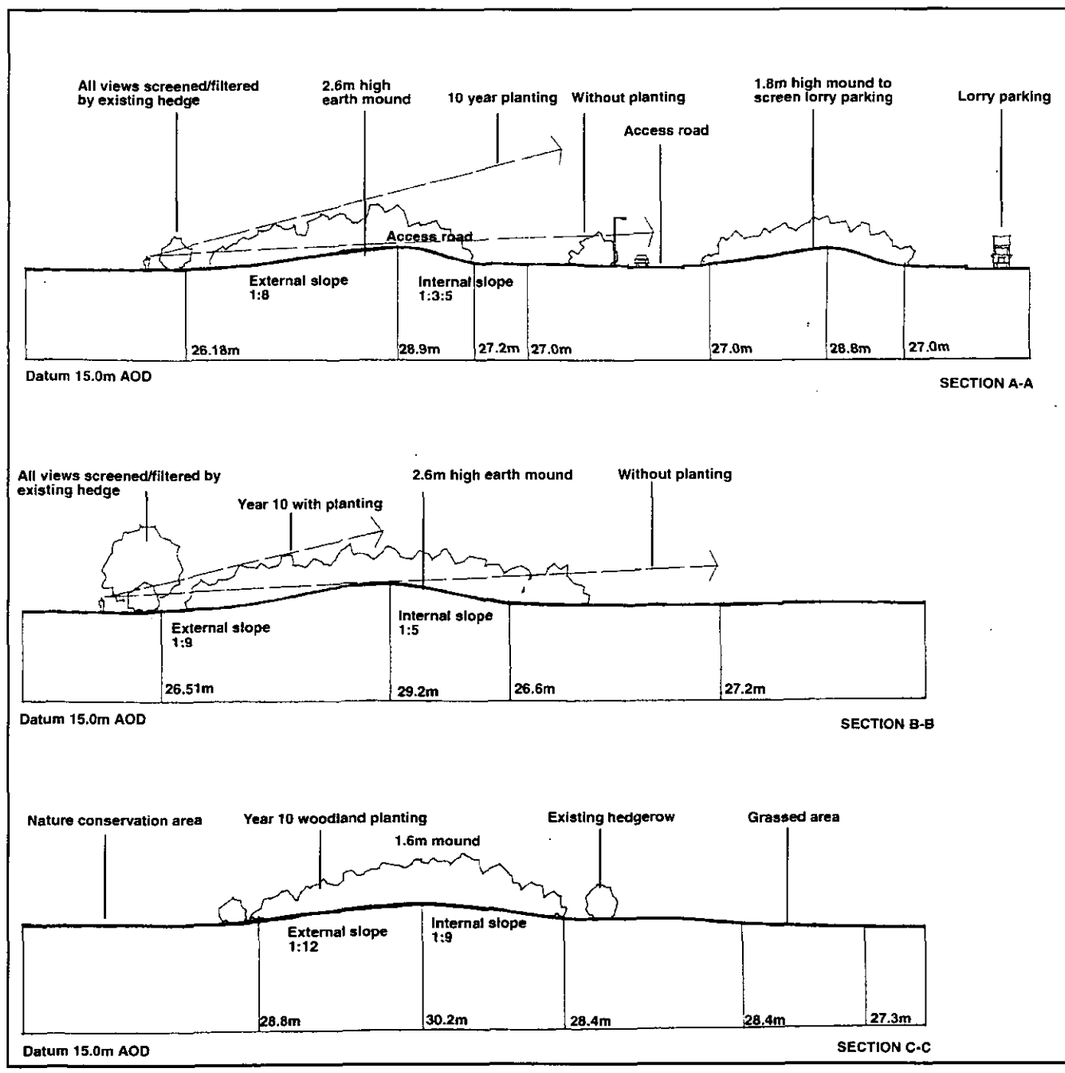


Figure 15: Site Boundary Sections

Building form and materials

5.101 It is proposed that the form of the main buildings and their external materials will be designed and chosen to blend into the local surroundings and with particular reference to materials used in the locality of the site.

5.102 It is suggested that all the buildings, with the exception of the Fuel filling Station, will have pitched roofs of tile or slate, and the walls will be constructed of brick that will resemble the predominantly red colours found locally. Large expanses of white or pale surfaces should be avoided as pale tones are more visible in the landscape generally.

Earth shaping and tree planting

5.103 Extensive tree and shrub planting and some gentle earth shaping are proposed around much of the development site. These are an integral part of the scheme, as shown on the Illustrative Layout (Figure 2) and detailed Site Boundary Sections (Figures 14 and 15).

5.104 Although local views will be substantially screened by existing hedgerows from the outset, low level screening will be reinforced by earth shaping, particularly along the southern boundary. This will be placed behind the existing hedgerow and will not generally be visible, even during the winter months. The mounding will have a valuable function by ensuring that low elements within the site will be screened from external view.

5.105 All the earth shaping would be densely planted with woodland trees and shrubs. The species used would be mostly native with particular reference made during their selection to locally occurring species and ground conditions. The planting would be deciduous with the exception of perhaps a small percentage of pine and some evergreen shrubs to reinforce the screening effect during the winter months.

5.106 The new woodland belt around the development site would be mostly planted as whips to achieve rapid establishment, but a percentage of larger semi-mature stock would be used to achieve immediate effect. Once the tree planting around the site has established, it will begin to read in the landscape in a similar way to the existing nearby woodlands which are of about the same scale in terms of the length of their edges.

5.107 Although substantially deciduous in content, in winter the depth and density of the planting would substantially filter and interrupt views towards the taller elements of the development including the roofs of the buildings.

5.108 A specific additional mitigation measure will be undertaken as part of the new slip road construction on the elevated roundabout that provides access into the site. The widening of the embankments to accommodate the slip road opposite the site will necessitate the removal of existing vegetation, potentially opening views from the roundabout into and across the site. As mitigation, it is proposed that the embankment be further widened to create a 4m wide level margin adjacent to the road. This will then be planted with a dense hedge to create an effective 1.5m high screen from the outset. Beech will be the preferred material because as a hedge it retains its dead leaves in winter. This will be effective in screening views from private cars. Below the slip road, the embankments will be planted with forestry whips, as elsewhere, that will in time add to the screening effects of the hedge. Planting is also proposed within the development area. This planting contributes to making an attractive environment for users as well as enhancing the appearance of the site and its landscape setting insofar as they might be seen in external views.

Lighting

5.109 A number of mitigating measures can be introduced to the proposals to limit the effects of lighting. These include reducing the height of light sources to the safe minimum, controlling the direction and shielding of light sources, the choice of light to be used, and the effect of tree planting and earth shaping.

5.110 The choice of column heights could be as follows: 8.0m columns in car parking areas at about 15–20m intervals, 10.0m columns in the HGV Park at 30-40m intervals, 8.0m columns in the Coach Park and along internal roads at about 30m intervals. Low bollard lights could be provided within pedestrian areas and 2m high bollard lighting along the access ramp to Junction 8/9. These are the lowest heights permitted by the DETR for sites located in sensitive landscape areas.

5.111 It is also proposed that all light sources be fitted with appropriate cut-off shields to prevent the indiscriminate spread of light beyond the areas to be lit and to conceal the bright light sources themselves from wider view. This measure is recommended in the 'Guidance Notes for the Reduction of Light Pollution' produced by the Institution of Lighting Engineers.

5.112 Other recommended measures will be taken, including the careful design of lighting levels to avoid over-lighting and the use of down lighting as opposed to up lighting and the choice of high pressure sodium lamps with flat ... to all units to assure minimum glare.

5.113 Finally, the proposed tree planting and earth shaping around the site will limit the night time effect of lighting. Earth shaping would be effective in concealing low level lighting bollards and reflected light off vehicles.

5.114 The night time effect of the proposed development should also be considered in its wider context. In general terms, the site lies in an area of transition between predominantly rural areas to the west and increasingly developed areas to the east. Whilst there are dark areas in the locality, there is also a significant amount of lighting in the area of the application site. The brightest and most obvious source of light in the area is Junction 8/9 itself, which is elevated some 5 metres above the site. Lighting covers not only the immediate area around the junction, but it also extends for some distance along the various approach roads including the M4 which is lit as far as the north-western corner of the application site. Continuous lighting along the M4 towards London begins at this point.

5.115 In the context of the raised lighting at the junction, the moving lights of vehicles on the motorways and other roads, and the lighting of the motorway itself, the effect of the proposed development will be relatively slight.

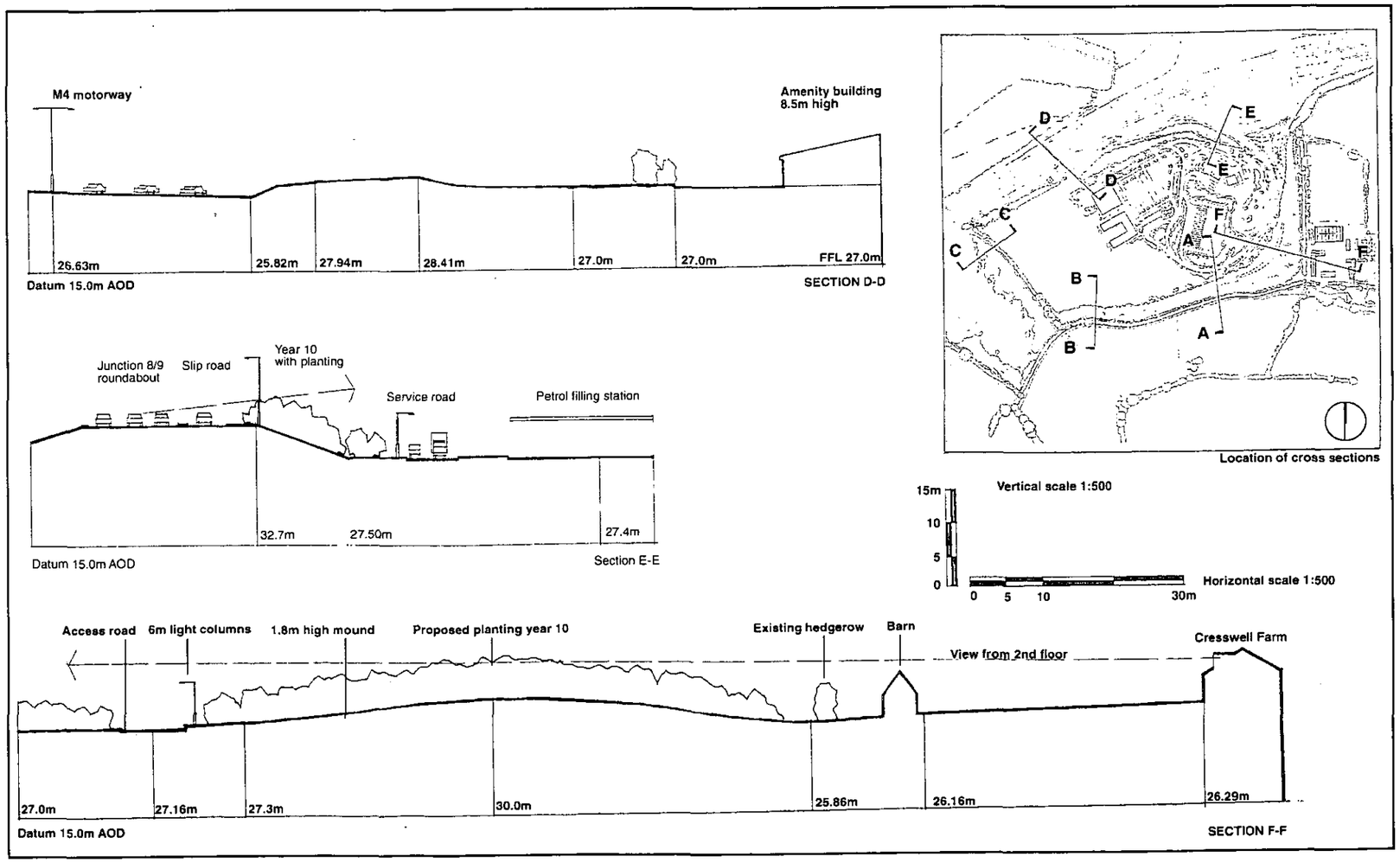


Figure 16: Site Boundary Sections

The Effect of the Proposals on Landscape Character

5.116 The study of landscape character has found that, whilst the landscape is substantially open and undeveloped in character, it is nonetheless significantly influenced by various forms of development and activity. In aggregate, these clearly indicate the nearby presence of a large conurbation, and there are constant reminders of this as one moves through the area.

5.117 The development of a new Motorway Service Area on a previously undeveloped area of land without mitigating measures would undoubtedly add to and increase the influence of development on the area, reducing its openness, and therefore weaken to some degree the open character and reduce such rural qualities that the area currently has. With the mitigation measures proposed, in particular the large area of woodland planting, the landscape character will change or will be altered.

5.118 However, the effect of the proposed development must be seen in the context of the range of other development and activities that already exist in the area, and of course particularly in the context of the motorways, and notably the M4. The motorway and its associated structures, including lighting, and also the visual and audible effects of traffic moving along it, have a significant effect on the landscape character of the area. These influences extend as far as the southern boundary of Maidenhead at Cox Green to the north and as far as the village of Holyport to the south.

5.119 In the context of the motorway, as well as to a lesser degree the other urban influences and activities that exist, the proposed development will not have a significant effect on the landscape character of the area. The visual studies, together with an assessment of the mitigation measures, have found that the visual effects of the development will be very effectively contained close to the motorway and within existing landscape features and that, in time, these effects will be further reduced as new planting establishes.

5.120 As an activity closely associated with the motorway by nature, the character impact of the new development will be much less than would otherwise be the case. Located physically close to the motorway as well as being visually well contained, the proposals will have a limited effect on the existing character of the area. The effect of the development will be greatest when perceived from the motorway that it serves. From surrounding areas, the development will always be perceived, such as it would be, in the context of the motorway that will always have a much greater impact.

5.121 The assessment finds that the combination of the character of the development and physical association to a busy motorway and elevated motorway interchange and its very limited visual effects on surrounding areas results in a limited landscape character impact. The principal change will be the inclusion of further woodland belts to an area where there are already numerous woodlands of similar dimension to the belts proposed at the MSA site. The change in landscape character of the site itself is therefore a very appropriate one for the locality.

Conclusions

5.122 This Assessment concludes that the land to the south-west of Junction 8/9 of the M4 motorway is well suited to the proposed development, and despite the sensitivity of a Green Belt location development as that proposed would be acceptable in visual and landscape character terms. This is because, in large part, the site is already well screened from all directions.

5.123 The study of the site and the surrounding landscape has revealed that, with careful site planning including the siting of buildings and robust mitigation measures as described, the development can be successfully accommodated on this site. There will be limited adverse effect on views and the character of the landscape, even when the development is first constructed. Within a few years the establishment of woodland planting around and within the development will be fully screened from view and will increase tree cover in the local landscape.

PART SIX TRANSPORTATION AND HIGHWAYS

Introduction

6.1 This assessment of transportation and highway engineering issues considers the implications of developing an MSA in this location. The effect of the proposal on site access arrangements from the motorway interchange, internal layout, parking/circulation arrangements and temporary access during construction have also been appraised.

6.2 The Government's Ten Year Transport Plan 2010 indicates a number of congestion and safety improvements to be delivered by March 2002 on Trunk Roads. The Highways Agency (HA) has advised that M4 Junction 8/9 has been programmed for traffic signal modifications and associated carriageway widening, although a formal scheme was not available prior to preparation of this report.

6.3 In view of the HA proposals for M4 Junction 8/9, the road access scheme for the MSA has been designed to avoid any adverse effect on traffic flows at the junction and to avoid prejudicing any improvements gained from the HA's proposed junction modifications.

Highway Safety

6.4 Motorists require MSA facilities during journeys to enable them to relieve tiredness, hunger, thirst and physical discomfort, all of which can impair driving competence. Research undertaken for the DETR by the Sleep Research Institute at Loughborough University has shown that motorists who are unable to stop when they are too tired or stressed to continue their journey safely without taking a break, are posing a serious risk to highway safety.

6.5 A significant proportion of accidents on motorways are related to drivers' tiredness. Studies of actual personal injury accidents indicate that 20% or more of personal injury accidents have sleep or fatigue as a contributory factor. Research has confirmed that drivers are aware they are falling asleep prior to doing so, enabling them to heed advice to cease driving as soon as possible and take a rest. There is a legal requirement for HGV drivers to rest at set intervals, lack of facilities could contribute to a breach of safety regulations.

6.6 Enforced stops on the motorway due to lack of fuel present a hazard to those involved and other road users. During those periods of the day when free flow of traffic is not guaranteed it becomes more difficult to predict the driving time to the next MSA. For busy motorway corridors, provision of facilities at adequate intervals ensures drivers have the confidence of finding facilities without travelling for too long a period of time.

6.7 Provision of adequately spaced facilities will ensure that motorists have the opportunity to take regular breaks when necessary without diverting from the motorway. Many fatigue related accidents occur at night and in the early hours of the morning, demonstrating the road safety benefit of 24 hour opening of facilities and parking.

Proposed MSA Development

Temporary Effects During Construction

6.8 If approved, the access to the site for the initial works will be via a temporary entry off the slip road from Junction 8/9 returning to the westbound M4. Any local routes required to allow initial access to the site will be the subject of discussions and agreement with the local highway authority. Once the dedicated access road from the motorway interchange is constructed then all construction access will be from the motorway via the new arm of the junction.

6.9 Estimates indicate that there is no requirement for material to be exported from the site. Construction material delivery and contractor's vehicles will be the main source of construction traffic to the site.

6.10 A wheel wash unit of the self contained re-circulation type will be used to avoid the deposition of mud from the wheels of construction vehicles onto public roads.

6.11 During periods of dry weather, where there is potential for dust to be generated by construction activities on-site, water spraying from a mobile water bowser will be employed to prevent the dispersal of wind blown particles.

Site Layout

6.12 The site layout accommodates a range of facilities for the travelling public whilst taking account of environmental impacts. The proposed layout has been developed to achieve ease and safety of circulation, avoidance of visual intrusion and attraction of the facility to potential customers. The design of the internal road is based primarily on a circulatory road from which the parking areas and fuel filling station are accessed.

6.13 Parking facilities have been based on the formulae contained in Department of Transport Circular 1/94, the provision of parking spaces will be as follows:

Cars - 347
HGVs - 22
Coaches - 9

6.14 The parking areas for different vehicle types are accessed direct from the circulatory road, each clearly signed. The first parking area to be reached on entering the site is that for HGVs and vehicles towing caravans. A dedicated parking area for these vehicles is essential to allow adequate space to allow for safe manoeuvring. Sufficient turning areas are allowed for these vehicles to easily achieve access and egress from parking spaces.

6.15 The coach parking area is the next to be reached, comprising of angled bays with passengers alighting onto raised aisles. This space is provided close to the Amenity Buildings for ease and safety of access, including access for the elderly and for children. This area is reserved solely for coaches to avoid any conflict with other vehicles during manoeuvring.

6.16 A separate service yard is provided for vehicles providing services to the MSA, for example deliveries of food and laundry services. Landscaping around the yard will screen this area from users of the MSA.

6.17 All routes within the site will be fully signed using a clear and concise signing methodology to further assist with easy and safe access and manoeuvring through the site.

Proposed Lighting Arrangements

6.18 An essential safety and security requirement of MSAs is the need for adequate illumination for both pedestrians and drivers. The objective has been to provide safe and adequate illumination whilst minimising the spread of light beyond the site boundary. To achieve this the lighting will be as subdued as possible while remaining consistent with safety requirements. The heights of light columns have also been selected, along with lamp types, to prevent glare and to eliminate side-light pollution.

6.19 The lighting arrangements can be summarised for each area as follows:

Access Road
6.20 The access road from Junction 8/9 can be lit using low bollard lighting of 2m in height.

Internal Roads
6.21 Internal roads will be lit throughout on bracket column mounted lanterns on columns 8m in height at approximately 30m intervals.

Car Parking
6.22 All car parking areas will be illuminated by single or double bracket column mounted lanterns on columns 8m in height at about 15-20m intervals.

HGV Parking
6.23 The parking area for HGVs and vehicles towing caravans will be illuminated by single or double bracket column mounted lanterns on columns of 10m in height and 30-40m intervals.

Coach Parking
6.24 The coach parking area will require single or double brackets with lanterns on 8m high columns.

Pedestrian Areas
6.25 Low bollard lighting of 1m in height.

Other Areas
6.26Other on-site lighting comprises the lighting of the MSA buildings and fuel facility. Care will be taken to ensure that lighting in these areas does not spill out into the surrounding environment. Down lighters on the underside of the Fuel Filling Station canopy will be incorporated to reinforce this light sensitive philosophy.

6.27 Throughout the MSA, low profile, high pressure sodium with appropriate cut-off shields will be used to assure minimise glare.

6.28 Lighting column heights, type of fittings and lamps will mitigate light pollution. With these measures and landscaping, both within and on the periphery of the site, the visual intrusion of the proposed lighting will be minimised.

Access to and Egress from the MSA

6.29 Access to the site will be via a dedicated slip road from the westbound M4 at Junction 8/9 into the MSA site. A dedicated slip road will also be used by those vehicles returning to the westbound M4. Other vehicles needing to join the roundabout will return onto the road network via a new give way egress. Because of the difference in level between the MSA site and the roundabout, access from the motorway interchange uses a long inclined section of road. This design allows the level change to be achieved by vehicles using the MSA with minimal effect caused by the gradient.

Potential Transportation Impacts of the Proposed MSA

Existing Highway Situation

6.30 The M4, Junction 8/9 roundabout, A404(M) and the A308(M), are the responsibility of the Highways Agency acting on behalf of the DETR. All the roads are of motorway standard, with the M4 currently three lanes dual carriageway and the A404(M) and A308(M) two lanes in each direction. The high level of traffic passing through the junction has resulted in all arms of the roundabout being signalised throughout the day from Monday to Friday. There are two lanes at the stop line on each of the entry arms and three lanes at each stop line on the circulating carriageway.

Existing Traffic Flow

6.31 Traffic flows have been based on a full classified turning movement survey undertaken at Junction 8/9 during February 2000 between the hours of 07:00-10:00 and 16:00-19:00. The data was collected at fifteen minute intervals, with vehicles classified as Light Goods vehicles (including cars), Heavy Goods Vehicles and buses. The classified turning count information has been supplemented by automatic traffic data for the M4 provided by Babtie Group as part of their Southern Area Monitoring duties for the Highways Agency.

Opening Year and Future Traffic Flows

6.32 The design years parallel the proposed opening year for the MSA of 2003, and a future design of 2010, chosen to coincide with the predicted design-life of improvements that could be provided by the HA as part of the Government's 10 Year Transport Plan. The year 2002 has been indicated by the HA for completion of trunk road improvements at Junction 8/9, this assessment assumes that the junction improvements will be open by 2003 to allow a robust base for comparison.

6.33 In order to assess the future impact of the development, the existing junction was modelled to establish a base model for year 2000. Traffic flows for 2003 and 2010 have been derived by applying a growth factor to the year 2000.

Improvements at Junction 8/9

Potential Highways Agency Proposals

6.34 The HA has advised that traffic signal modifications and associated carriageway widening indicated by the Plan are being progressed within the confines of the highway boundary. In the absence of specific details on the scale of the HA scheme, the assessment identified potential large scale improvements that could be provided at the junction to the benefit of all road users by the HA, followed by identification of a smaller scale Agency scheme that would relieve congestion. These scenarios are referred to as; Substantial HA Improvements – HA Scheme 1 and Anticipated HA Improvements 2003 – HA Scheme 2. These provide the scenarios on which the assessment is based, having first identified existing capacity at the junction.

Substantial HA Improvements – HA Scheme 1

6.35 Scheme 1 concentrates on determining the maximum practicable at-grade improvements that could be achieved by the Agency within the confines of the highway boundary and determines the associated scheme design life. The fact that the existing junction requires improvement has been recognised by the Government. The actual scale of the improvements has not been determined at this time, however, the assessment shows that it is possible for the HA to pursue substantial at grade improvements to the junction with capacity to 2010. Although conditions are anticipated to deteriorate after 2010, these improvements would be expected to continue to provide benefit to the travelling public beyond this date before conditions would match the high congestion levels currently experienced at the junction.

6.36 The object of the Highways Agency improving the roundabout would be to provide additional capacity and hence reduce queues and delays for all road users. As part of the Substantial Improvement, it has been assumed that that this would be provided by the Agency through:

- an additional third lane on the A404(M) and M4 off-slip entries into the roundabout;
- the addition of a fourth lane on the circulatory carriageway to the north of the motorway;
- an additional lane on the A308(M) exit from the roundabout.

- The additional fourth lane on the northern circulatory carriageway would not affect the bridges over the motorway.

6.37 For the Agency to maximise its improvement within the confines of the highway boundary and secure the predicted benefit until 2010, it would be necessary for them to supplement the above works with dedicated lanes that would merge the:

- M4 Eastbound off-slip with the A404(M) northbound carriageway;
- A404(M) southbound approach to the roundabout with the A308(M) northbound carriageway, and;
- A308(M) southbound approach to the roundabout with the M4 Eastbound on-slip.

Anticipated HA Improvements 2003 – HA Scheme 2

6.38 Although Scheme 1 provides the greatest benefit, this assessment recognises that the junction as a whole could also be improved by a smaller scheme that is more cost effective and relieves many of the congestion issues without totally solving them. The second part of the assessment tested the proposal for an MSA against a network where additional capacity is provided to improve conditions over existing conditions to the overall benefit of the travelling public. This ultimately provides a sterner test.

6.39 Once again the Highway Agency's objective would be to provide additional capacity although at a reduced scale. It has been assumed that the anticipated HA proposals for 2003 may be condensed from those indicated by the Substantial Improvements indicated above, provided by the Agency through:

- an additional third lane on the A404(M), M4 Eastbound and Westbound off-slip entries into the roundabout;
- the addition of a fourth lane on the circulatory carriageway to the north of the motorway, and;
- an additional lane on the A308(M) exit from the roundabout.

Turn-In Rates

6.40 For the purpose of this assessment a turn-in rate of 7.5% has been applied to the peak hour flow. This is based on previous investigations associated with applications for off-line (junction) MSAs. It represents a figure previously acknowledged by the Highways Agency as appropriate for Junction MSAs. Experience at other MSA sites is that the turn-in rate during the peak periods (when the junction is busiest) is actually lower than the daily average, so using this figure provides a robust assessment.

Implications for the Motorway Junction

6.41 In this assessment computer modelling has been employed to determine the possibility of change in traffic flows at the Junction 8/9 interchange and the measures required to accommodate these. Details of the modelling are provided in Appendix 1.

6.42 It is normal when assessing the impact of a proposed development in traffic terms to calculate the traffic which will be generated by or attracted to the development. The purpose of an MSA is to serve existing road users, therefore no significant additional traffic will be generated overall by the proposal. There will however, be a re-distribution of traffic movement, where westbound M4 motorists divert off the motorway to use the facilities and then return to the M4. In assessing the implications of the MSA therefore, the primary consideration is the capacity of the junction to accommodate the consequent additional traffic movements. The MSA access design incorporates the use of dedicated slip roads in order to avoid an increase of traffic flow on the roundabout.

6.43 The operation of the roundabout was assessed using a TRANSYT computer model, which seeks to optimise the performance of traffic signal systems. The improvement or deterioration in conditions is measured as a sum of the delay and stop costs for each link, expressed as the Performance Index. By considering the cumulative Performance Index for the junction as a whole, the impact of various scenarios were assessed for both morning and evening peak hour periods for the years;

- 2003 No HA improvements, with and without MSA,
- 2003 HA Scheme 2 improvements, with and without MSA,
- 2003 HA Scheme 1 improvements, with and without MSA,
- 2010 HA Scheme 1 improvements, with and without MSA.

6.44 The results of the assessment can be summarised as follows:

Year 2000 The junction interchange is currently operating over capacity during both the morning and evening peak periods with the highest degree of saturation at the A404(M). Overall the traffic flows highlight the relative dominance of the movement between the A404(M) and the M4 during both morning and evening peak periods.

Year 2003 The analysis compared the junction links both collectively and individually, in the absence of improvements the junction capacity continues to deteriorate.

The TRANSYT analysis shows that the introduction of the proposed Westbound MSA has no marked impact on the benefits to be derived from HA Scheme 2 improvements. Even without the anticipated Scheme 2 improvements, the provision of the MSA off-site remedial measures leaves a situation where conditions at the junction are no worse than if the development had not taken place.

In 2003, Scheme 1 improvements reduce the queues on the main entries to the junction and improves capacity on the main circulatory carriageway in the morning and evening peak periods. The inclusion of new access/egress to the MSA development shows no detrimental effect on the benefit derived from Scheme 1 around the junction to the south of the M4.

Year 2010 The improvement provided by Scheme 1 without MSA development carries through to 2010 where despite anticipated increases in traffic through the junction, the predicted queue levels generally remain below 2000 values with the exception of one link.

6.45 However, with the inclusion of MSA development in 2010, the Performance Index for the junction shows a further improvement compared to the situation with junction improvements alone.

Conclusion

6.46 From the assessment of traffic and highways considerations, it is concluded that the provision of a new MSA at Junction 8/9 of the M4 will comply with Government Guidance and be of significant benefit to users of the motorway network.

6.47 The majority of the construction traffic, apart from early site preparation, will access the site direct from the motorway interchange. The internal road layout of the site is designed to recognised and accepted standards and allows safe circulation of traffic. The general layout of the MSA minimises land take as well as visual intrusion of the proposals. Lighting arrangements have been employed to ensure adequate and safe lighting whilst minimising the effects of light pollution. Access arrangements to the MSA have been designed to comply with Government advice and safety standards, providing good and easy access to the site.

6.48 The assessment has taken into account the potential of Highways Agency proposals for improvements at Junction 8/9, although the scale of this improvement is unspecified at this time.

6.49 The off-site highway works provided for the traffic diverted to the proposed MSA from the M4 and altered circulating movements for traffic already using the roundabout have been designed using robust traffic figures. This has been achieved by using a turn-in rate which does not reflect the fall off in value during peak periods, the use of NRTF Central growth rates and the fact that the turn-in rate has been applied to all traffic using the roundabout in addition to M4 traffic.

6.50 The off-site works for the MSA cater for traffic redistribution without detriment to any short, medium or long-term improvements that the Highways Agency may need to provide if they wish to provide an at-grade improvement within the confines of the highway boundary for the benefit of the travelling public.

6.51 The provision of an MSA on this westbound stretch of the motorway network to provide rest, refreshment and refuelling facilities will enhance highway safety. In addition to providing essential services to travellers at one of the busiest parts of the national motorway network, the TRANSYT analysis demonstrates that as traffic flow builds, the proposals will provide some relief to traffic flow at Junction 8/9 during peak hours. The overall transportation and highways impact is therefore positive.

PART SEVEN SOCIO-ECONOMIC EFFECTS

Introduction

7.1 This part of the statement provides a consideration of the effects which the provision of adequately spaced services to the motorway and roads system will bring. The potential local job creation from the scheme is also considered. The environmental impacts on the residential area closest to the proposal have been assessed in more detail in the individual sections of the statement, Part 5 addressed the visual impact of the scheme, whilst Part 8 considers the noise and air quality impacts.

Improved Highway Safety

7.2 Given that there is a need for the Motorway Service Area in terms of spacing from existing MSAs and traffic flow, the scheme will provide a large number of motorists with facilities to fulfil their requirements. Surveys have shown that are a proportion of motorists that need to stop because they are too tired or stressed to continue their journey safely without taking a break. Reduced spacing between MSAs will generally result in additional safety benefits by providing more opportunities for drivers to stop and rest.

7.3 Studies and research for the Highways Agency have shown that motorists need to stop because they are too tired or stressed to continue their journey safely without taking a break and can be assisted by the provision of more services. The MSA will provide an opportunity to stop when the need arises rather than have to continue driving. This is likely to reduce the accident rate on the motorway and road network, contributing to lower levels of injury and fatality, and also less delays for travellers not directly involved. Motorway accidents can often involve large numbers of vehicles and can result serious injury or deaths, they are costly, both financially and in personal terms.

7.4 The Lodge element of the proposed development is also beneficial in terms of road safety. Lodges are largely used by business people taking a break in their journeys. Most arrivals tend to be during the middle to late evening, when these people have been driving for some time. Provision of a Lodge close to a motorway avoids the situation where tired motorist need to leave the principal route and search for suitable accommodation, or continue their journey, thereby increasing the risk of having an accident.

7.5 The provision of dedicated slip roads to provide access to the MSA at the junction roundabout will reduce the number if vehicles approaching the traffic lights to join the roundabout. The improvements will extend the time over which the junction will accommodate increasing levels of traffic in conjunction with the Highways Agency proposals for motorway improvements. The work by the applicant will therefore represent a cost saving of public expenditure, whilst improving the situation for users of the junction.

Employment Related to Development

Construction phase

7.6 It is estimated that the construction phase, although short lived , will generate in the range of 75-100 full-time equivalent jobs in the contracting and fitting out sector. It is not likely that all of these jobs will be sourced from the local area, though a proportion will be. There may also be a small scale multiplier effect with supplies and equipment being obtained locally.

Operational stage

7.7 When in operation the Service Area will create approximately 200 new jobs, some of which will be part-time jobs. This equates to between 100-130 full-time jobs that will be sustained by the development. Additional local jobs will be generated for suppliers and maintenance contractors.

Public Access

7.8 There are no footpaths or bridleway routes over the site. The network of well used footpaths near the site will continue to be available for the public to use and the effects of the MSA on the enjoyment of these routes have been minimised. The visual impact of the development as viewed from these footpaths has been addressed in the Landscape and Visual Impact (Part 5) of this Environmental Statement.

Conclusion

7.9 The conclusion, is that the socio-economic effects of the proposal are positive.

PART EIGHT NOISE AND EMISSIONS TO AIR

Noise Assessment

Introduction

8.1 This part of the statement appraises the proposed development with regard to the effect of road traffic, general on-site and construction noise.

8.2 The primary sources of potential noise impact within the site are:

- the access road to the site from the motorway junction;
- vehicles manoeuvring on site;
- noise from intermittent sources: vehicle doors, alarms, engine starting; and
- noise from buildings eg. extractor fans.

Road Traffic Noise

8.3 Road noise levels were predicted at the time of a previous MSA proposal for this site in 1994-5. The predicted noise levels were calculated using the method given in the Department of Transport Manual - "Calculation of Road Traffic Noise". The number of vehicles using the access road to the MSA was calculated using traffic flow forecasts for the M4 and applying a turn-in rate of 7.5% to this traffic. Assumptions have necessarily been made about the road surface, the composition of the traffic and the speed of traffic. The omission from the model of the noise reducing effects of intervening vegetation and ground contouring results in an overestimation of the level of noise affecting nearby receptors.

8.4 The MSA layout used for the assessment was that submitted with the original planning application, dated June 1994. This layout has subsequently been modified and the use of the proposed MSA has been reduced from an all-movements scheme to a facility for westbound traffic only. The number of vehicles entering the site will be considerably less for the current proposal compared to the figures used for the predictions made for the 1995 scheme.

8.5 These changes in the current scheme are all beneficial in terms of a reduction in the noise impact on nearby properties, in particular the effect on Cresswells Farm, which was identified as the property most likely to be affected. To determine the potential noise impact of the development, noise levels have been predicted for the first floor level (4m) at Cresswells Farm House. This property was chosen because it is closest to the proposed development and is therefore most likely to be adversely affected by the proposals.

8.6 The noise calculations predicted for 1997 indicated that the effect of a full-movements MSA with perimeter ground contouring of at least 2m in height would result in an increase of less than 1dB(A) on the L_{10} (18 hour) value at Creswells Farm House. In 2012 a full-movements MSA would also result in less than a 1dB(A) increase in noise over and above the situation where no MSA exists. This increase is not significant, indeed it is unlikely to be perceptible, as a change of 3dB(A) is the minimum perceptible under normal conditions.

8.7 The predicted noise levels at Cresswells Farm House would not be sufficient to entitle the property for any noise insulation provision under the Noise Insulation Regulations 1975 (as amended). This is regarded as a reasonable identification of the minor significance of noise created by the operation of an MSA incorporating ground contouring.

8.8 The predicted increase would in reality be less when the effects of vegetation planted on the perimeter contouring are also taken into account. Importantly in addition to this, the 2001 westbound only scheme would receive less traffic than the assessment for the 1995 proposal which used a figure for the year 2012 of 12,000 vehicles using the facility daily. The number of vehicles likely to visit the westbound facility is estimated as being 6,000.

Noise Evidence from an Existing MSA

8.9 A noise survey was undertaken at an existing off-line MSA, Cherwell Valley on the M40, to assist in giving an assessment of noise sources on the site. Cherwell Valley MSA was chosen because it exhibits similar characteristics to the M4 proposal as a single sided site free from extraneous noise sources.

8.10 Measurements were taken of the most significant noise sources within the site, for example close to the exit road to the MSA which is on an incline similar to that proposed at Junction 8/9. Readings were also taken near to the air conditioning systems for the amenity building. In all instances the noise measurements were taken in close proximity to the noise source, within 10 metres.

8.11 At the time of the noise survey at Cherwell Valley MSA, the daily flow of traffic visiting the MSA was greater than that anticipated for the current M4 application. In addition, the noise predictions for the M4 MSA were based on a full movements

facility with daily traffic flows of 10,400 and 12,000 vehicles in respective design years, whereas the current westbound only scheme is predicted to receive in the region of 6,000 vehicles per day. Therefore the data recorded for determination of noise emanating from an operational MSA make the assessment robust.

8.12 The findings showed that even at very close range and at peak times of use, none of the noise generated would exceed the noise insulation entitlement threshold at Cresswells Farm House.

8.13 It is important to note that Cresswells Farm lies approximately 60 metres from the edge of the site compared to the 10 metre range at which all noise measurements were taken at Cherwell Valley. Noise diminishes very rapidly over distance, by the inverse square of distance from source. These calculations demonstrate that the noise sources within the proposed site will have no significant adverse effect on Cresswells Farm.

Construction Noise

8.14 There is no reliable method for predicting construction noise due to the inherent variability on construction processes. Although only of a temporary nature (less than 12 months) construction processes are liable to cause some nuisance to local residents. The main sources of noise are likely to derive from the use of plant and machinery for construction and vehicle noise on-site. The background noise of the motorway will have a significant effect in masking the noise during building construction.

8.15 It is proposed that in all cases of high intensity noise, measures should be implemented to control the noise at source. The timing of such uses will also be important. It is therefore suggested that restrictions be placed on the use of heavy plant during noise sensitive periods, for example at those times when ambient noise levels from the motorway are low. Operating hours at the construction site will be limited to 7.30am to 6.00pm Monday to Saturday, with no working on Sundays.

Noise from Buildings

8.16 The Amenity and Lodge buildings are located in the central northern part of the site close to the motorway, and positioned away from Cresswells Farm and the footpaths south of the site. Extractors, heating and ventilation equipment will be situated on the least sensitive side of the buildings facing towards the motorway.

Noise Assessments Conclusions

8.17 Since the original noise assessment was made, a number of mitigation measures have been introduced to the scheme which will further diminish the potential of the MSA to have any adverse noise effect on Cresswells Farm. There has been a realignment of the access and exit road from the junction away from the Farm and earth mounding introduced. These amendments are shown in the masterplan Figure 3 (Page 3).

8.18 Cresswells Farm is the only building located sufficiently close to the site to generate the need for careful noise assessment. With the traffic noise from the M4 and from the junction predominating, it is unlikely that the inhabitants of the Farm would perceive the additional noise created by an operational MSA at the application site.

8.19 Assessment of noise levels at an existing MSA indicate that even when the ambient noise of the M4 motorway is low, noise sources within the site will not have a significant (i.e. more than 1dB(A)) adverse effect on Cresswells Farm.

8.20 Construction activities will be controlled and conditioned to minimise any adverse effects. Discussions will be held with the Environmental Health Officer to determine noise sensitive periods in which the use of particularly noisy plant should be restricted.

8.21 With the range of mitigation measures proposed, there will be no adverse impact from noise on nearby properties.

Emissions to Air Assessment

Introduction

8.22 This section of the report considers the possible impact both on local inhabitants and also on the global environment of air pollution that could be expected to occur as a result of the construction and operation of an MSA at Junction 8/9 of the M4.

8.23 The indexes of air quality used in such assessments are the key pollutants emitted from motor vehicles, namely carbon monoxide (CO), total hydrocarbons (THC), oxides of nitrogen (NOx) and total particulates.

8.24 Volume 11 of the DoT's Design Manual for Roads and Bridges (DMRB), sets out the Environmental Assessment model that is to be used to predict possible air quality impacts from new or altered road schemes. Only those houses within 200m of the proposed road alterations need to be considered, as air pollution will have dispersed to background levels beyond this distance.

8.25 The scheme will not generate additional traffic, other than service and staff vehicles. However, an MSA will alter the behaviour of existing traffic using the motorway. This assessment determines the scale of any resulting environmental effects.

Localised Effects

8.26 The model given in the Air Quality section of the DMRB has been used to predict the effects of the proposals on Cresswells Farm. This property has been chosen because it is the only house within 200m of the road layout changes of the MSA.

8.27 The predicted concentrations of the key pollutants at Cresswells Farm are well below the guideline values given in the DMRB Volume 11.

8.28 An air quality assessment was carried out at Cherwell Valley MSA, which is a junction site similar to the M4 proposal but larger than the westbound MSA proposed at Junction 8/9. Airborne concentrations of carbon monoxide and nitrogen dioxide, two of the key pollutants required in the predictive model, were measured at four locations in and around the Cherwell Valley MSA.

8.29 In all sampling locations, the concentrations of carbon monoxide measured throughout each sampling day were very much less than the guide value given in the DMRB. Similarly, concentrations of nitrogen dioxide were well below the guide value.

8.30 There was little variation in pollutant concentrations between sampling locations although the sampling locations were sited in areas where vehicle flows were very different. These results indicate that there is a rapid dispersion of pollutants within the MSA area.

8.31 Dust emanating from the site during the construction process can also have a localised effect on air quality. Dust originates from excavated soil and can be dispersed by wind or by disturbance caused by lorry movements. During the construction period water bowsers will be used to suppress the spread of dust when necessary.

Global Effects

8.32 According to the DMRB, prediction of the overall, global, effects of a scheme should give the total pollution load emitted from vehicles. However, in the case of an MSA this approach is difficult to apply for a number of reasons. For example, motorists using the M4 who wish to stop for refreshment/fuel will stop, whether at this MSA site, or elsewhere. The presence or otherwise of an MSA at this site is therefore likely only to redistribute, rather than directly increase, vehicle pollutant emissions. An assessment of the overall/global effect of the development has not therefore been undertaken.

8.33 Because an MSA is not a generator of traffic it can reasonably be assumed that the overall contribution of the development to global pollution is minimal. Indeed, by providing easily accessible services adjacent to the motorway, this development will reduce the need for drivers to seek services away from the motorway network. Such journeys can cause vehicles to take long detours from their desired route, thus adding to the length of journeys. By reducing such detours by providing conveniently placed services, the overall effect of the scheme can be seen to be positive.

Emissions to Air Assessment Conclusion

8.34 Development of an MSA at Junction 8/9 will increase the level of traffic flow at the junction and hence cause a local increase in vehicle exhaust emissions. Applying the model set out in the DMRB, this increase would not be sufficient to raise the concentration of the key pollutants at Cresswells Farm to more than 35% of the guide values.

8.35 Air pollution monitoring at an operational MSA gave results for CO and NO_2 very close to the values predicted. Hence, based on the best information available, an operational MSA at this junction would not have any significant effect on air quality at local residences.

8.36 The overall global air quality model in the DMRB as not considered particularly applicable to the development of an MSA. However, the nett effect on global pollution loads of an MSA at Junction 8/9 are considered to be negligible, with some positive effect possible due to the provision of services at a convenient location for motorway users, avoiding the need to leave the motorway in search of facilities.

PART NINE ECOLOGY AND NATURE CONSERVATION

Introduction

9.1 This section of the Statement assesses the ecological value of the application site and aims to identify species of flora and fauna of importance. The impact of the proposals is assessed, mitigation measures are explained and conclusions reached.

9.2 The assessment is the result of visits to the proposed site and its surrounds in winter, spring and summer, a desk study of existing information and planning policies.

Site Description

9.3 The site is a single field on a seasonally water-logged soil, derived from river terrace gravel and Tertiary clays. It is currently improved grassland used for the production of turf. The vegetation is therefore dominated by a very limited range of grass cultivars. There is evidence of mole burrows in places, and also of extensive rabbit grazing around the field edges.

9.4 The site has hedgerows to three sides, south, west and east Figure 17 (Page 28). These are predominantly of hawthorn, with some hazel and a few mature oak trees. Dogwood, blackthorn, ash and field maple are also present in the general area. The hedgerow to the south of the site is a hedge with ditch. The hedge bottoms appeared species poor, with signs of high nutrient levels and other agricultural influences. Many lengths of the hedgerow are extensively burrowed by rabbits. The hedges are tall and rather gappy at the base, especially along the western boundary, and appear to provide relatively poor habitat for small birds.

9.5 The motorway roundabout embankment at the north eastern corner of the site supports a matrix of recent habitats. There is some open grassland, including a few marshy patches with sedges, and areas of dense bramble and scrub, the latter the result of the motorway landscape planting of hawthorn, rose, blackthorn, birch and hazel. The proportion of open habitat appears to be declining as bramble spreads and the shrub species mature and extend their cover. The scrub provides a thicket of dense cover which is likely to attract common birds. The open grassland is quite rich in common wildflower species and the southerly aspect and the shelter offered by scrub encourages some local invertebrate interest. The embankment is very heavily burrowed by rabbits.

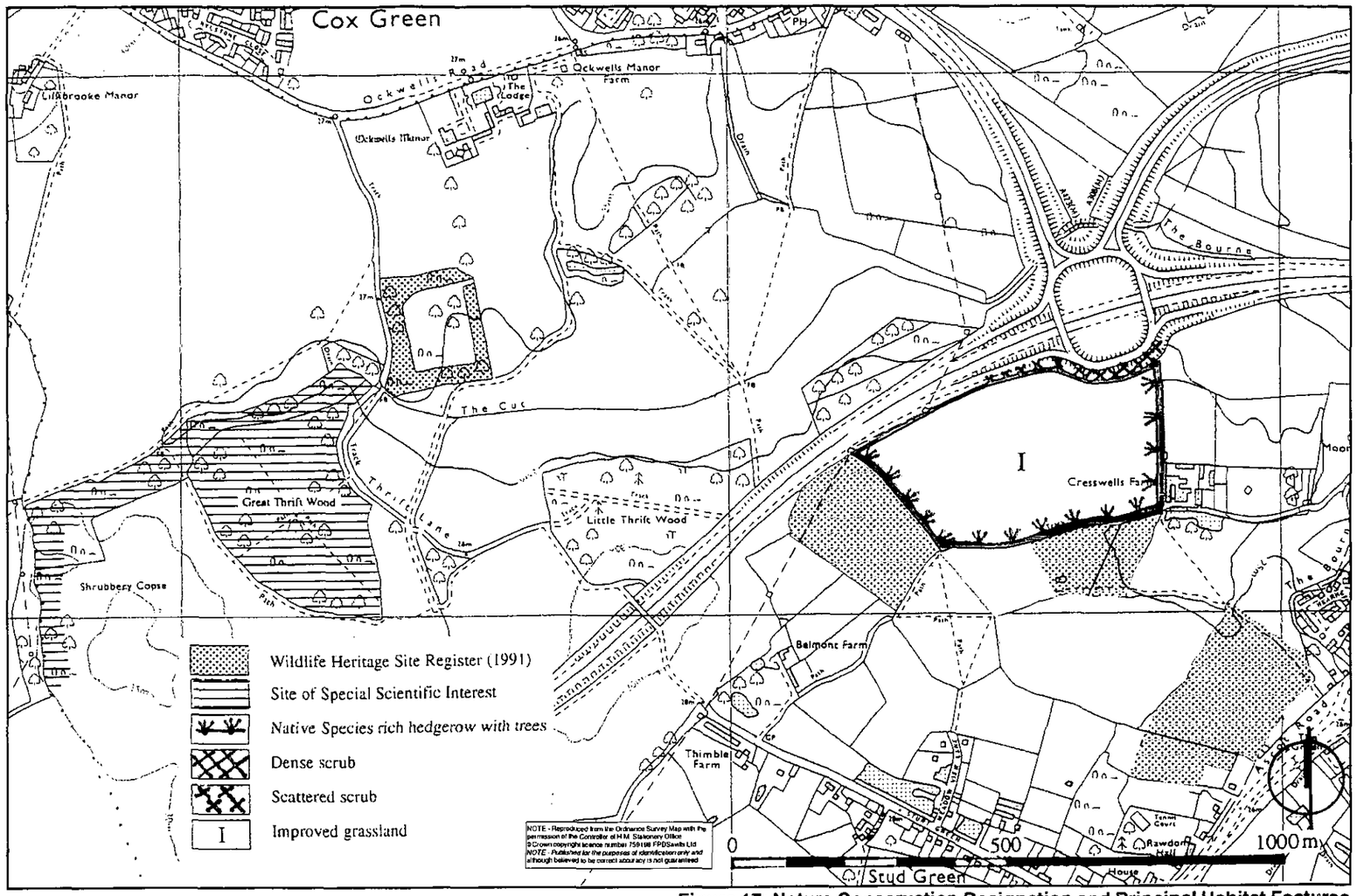


Figure 17: Nature Conservation Designation and Principal Habitat Features

9.6 Some areas of more open scrub on the western parts of the embankment support woodland plants including primrose, dog violet and wood spurge, in addition to the more ubiquitous species of shaded areas such as ground ivy and cuckoo pint. As this is artificial 'made ground' of approximately 30 years of age, these 'woodland indicators' raise questions of origin. It seems likely that woodland top soils excavated during motorway construction were re-used here.

Evaluation

9.7 The proposed site itself is of extremely low nature conservation importance, with some very local interest confined to the motorway junction embankment and the surrounding hedgerows.

Protective Designations

9.8 The proposals would not affect any statutory nature conservation site. The nearest Site of Special Scientific Interest is some 900 metres to the west on the other side of the M4 motorway.

9.9 While the site itself is not designated, there are two Wildlife Heritage Sites (WHS) nearby. WHSs are semi-natural habitats of County level importance for nature conservation identified by the Berkshire Buckinghamshire and Oxfordshire Naturalists' Trust (BBONT). The Berkshire Nature Conservation Forum has co-ordinated the non-statutory designations which have been included in Local Plans.

9.10 The Royal Borough of Windsor and Maidenhead Local Plan (Adopted July 1999) includes Policy N9 which states:

> *In considering development proposals affecting local nature reserves and Wildlife Heritage Sites, the Council will have particular regard to the need to protect natural features and the availability of mitigation measures. Measures will be required to safeguard and enhance Wildlife Heritage Sites included within any development proposals.*

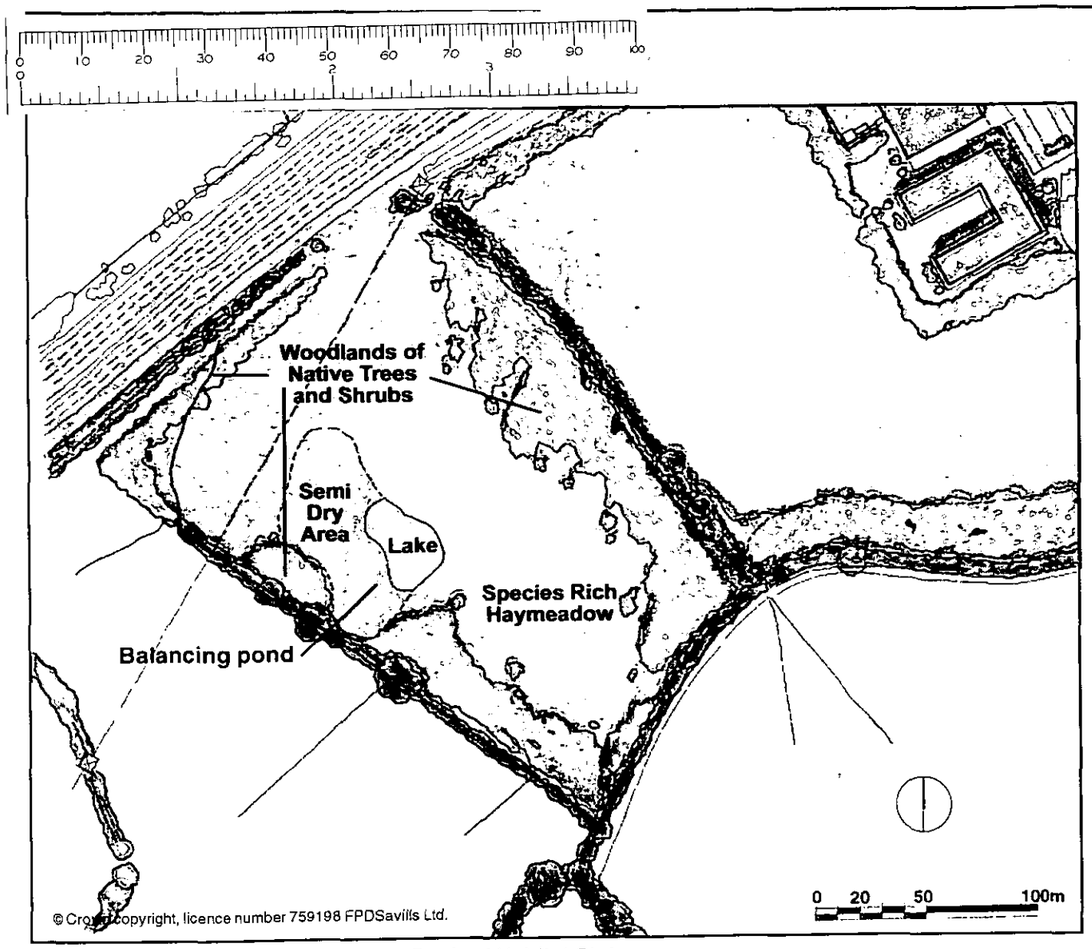


Figure18: Nature Conservation Area Desired Habitat State

9.11 The species list for WHS SU 87 Z01 includes several reliable indicators of unimproved dry to damp grassland, including meadow thistle, sneezewort and pepper saxifrage, and others of marshy areas which are likely to relate to the margins of the pond which lies within the field. In all, there are 11 species considered to be of high interest.

9.12 The fields which comprise SU 87 Z01 were inspected briefly during site visits. The vegetation was judged of somewhat limited interest, and the field to the south in particular appeared to have been agriculturally improved. The field to the west has recently been used for turf production. The interest noted by BBONT in 1991 has dwindled or has subsequently been lost as a result of agricultural operations as can be seen in the Aerial Photograph Figure 2 (Page 2).

Impact of the Proposals

9.13 The proposals will predominantly affect the agriculturally improved field that is used for turf production, and which is of no significant nature conservation value.

9.14 The new access from the motorway junction will affect a part of the recent scrub and grassland habitat which has developed on the embankment and which has a local value for wildlife. However, the habitat is entirely artificial and the losses could easily be replaced by reproducing the matrix of habitats in the landscape scheme for the new embankments which would be created. The areas which support interesting woodland plants are largely avoided by the development.

9.15 All hedges will remain unaffected by the MSA and will be enhanced by additional planting and management. These measures will create a more diverse and valuable wildlife habitat.

9.16 While some of the neighbouring fields may have local to County nature conservation interest, the development is not considered to present any direct threat. The small possibility of indirect impact through hydrological effects or changes to the management of agricultural land are not thought likely to be significant.

Mitigation and Opportunities for Positive Improvements

9.17 The landscape scheme for the new access road from the motorway roundabout will be designed to provide replacement and extended habitats for the communities displaced from the existing embankment. This will be achieved through the provision of a matrix of native scrub and tree planting, combined with more open grassland areas which would be sown with suitable mixtures of native grasses and wildflowers. The selection of plant species would be made with the nectar and larval foodplant requirements of local butterflies and other insects in mind.

9.18 Within the development strategy, landscape proposals aim to provide wildlife benefits through sympathetic design and the use of plant species which are native to the area.

Nature Conservation Area

9.19 A field (4 hectares) currently used for the production of lawn turf is proposed for the nature conservation area. It was previously noted as being unimproved mesotrophic grassland with a rich flora (BBONT 1991) and was listed as part of Wildlife Heritage Site (SU 87 ZO1). The hedgerows forming the field boundaries are of low to moderate diversity comprising mixed native shrub species, mostly hawthorn and hazel, with some hedgerow ash and oak trees. No threatened or rare species or communities are present.

9.20 This field presents an opportunity for the creation of an interesting and valuable wildlife reserve. The area is sufficiently robust to permit increased public usage, and the site is very suitable for the habitat creation measures proposed. In particular, several years of turf production will have reduced soil fertility and diminished the seed bank of weeds in the soil. The creation of a new species-rich grassland should therefore be relatively straightforward. New woodland will be established through tree and shrub planting of locally native species in the area shown on the plan, largely based around existing hedgerows. The detailed design of the edge of the meadow would integrate with the woodland planting to provide sheltered areas and a considerable length of 'edge' habitat.

9.21 Part of the field will be used for the construction of a balancing lake. This will be integrated into the habitat creation exercise and have an important secondary nature conservation function. While most of its area will be dry except during times of heavy rain, part will be over-deepened with the requirements of wildlife in mind so that it forms a permanent lake. The shoreline will be convoluted and the edges gently shelving to permit access and egress by amphibians and waterfowl. Native aquatic plants will be introduced in small quantities to encourage rapid colonisation by wildlife.

9.22 The edges of the dry balancing area will be very shallowly shelving. It will be developed and managed as part of the hay meadow, though it is thought that its lower lying nature and the occasional temporary inundation will encourage the development of a slightly different vegetation, providing further diversity to the wildlife reserve.

9.24 It is proposed that the habitat creation works would be undertaken as soon as possible following the start of the scheme, with lake creation, tree planting, and the conversion of the field to haymeadow in year 1. A footpath link will be provided from the public right of way that lies to the south of the field. This will be maintained so that local walkers can gain access to the lake shoreline for informal recreational purposes.

9.25 In the short to medium term the creation of grassland and wetland is likely to produce a rapid increase in the nature conservation and amenity value of the site. This interest will increase in the longer term, when the broad-leaved woodland planted to bolster the boundary hedgerows matures. An outline of the management plan for this area is included in Appendix 3, Ecology and Nature Conservation.

Conclusions

9.26 The conclusion of this appraisal is that the proposals will have no significant adverse impact on wildlife. The proposals include positive benefits for wildlife through extending the areas of semi-natural habitats on the site. The proposal for a nature conservation area to the west of the MSA includes the surface water balancing lake and a range of habitats including woodland, meadow grassland, aquatic, semi-aquatic and marginal vegetation will be a significant positive effect.

PART TEN DRAINAGE AND WATER QUALITY

Introduction

10.1 This section assesses the impact of the proposed MSA on water related issues. There are three sources of potential impact:

- foul drainage from the development;
- surface water contamination and drainage to adjoining watercourses; and
- contamination of groundwater.

10.2 This section of the Environmental Statement assesses any identified impacts, explains the mitigating measures which will be taken to remove these impacts and reaches conclusions on the overall impact of the scheme on drainage and water quality.

Foul Water Drainage

10.3 MSAs are often built in rural locations, remote from sewage treatment works. Foul effluent from these facilities may be dealt with either by treatment on site or by discharge to a public sewer. In this instance the MSA is situated approximately 1km to the west of the nearest settlement, Holyport.

10.4 The nearest point of connection to the public sewerage system has been identified to be at the junction of the A330 and the access road to Cresswells Farm – some 0.5km from the site. The nearest Sewage Treatment Works (STW) is situated at Bray Wick, some 2km to the north west, which serves the Maidenhead area.

10.5 The alternative option to a connection to the public sewage system is on-site treatment and disposal to the adjacent watercourse which flows along the southern boundary of the site. A package Sewage Treatment Plant (STP) could be employed to achieve an effluent to consent standard.

10.6 Foul effluent loading is extremely variable, both biologically and hydraulically. The receiving watercourses will be sensitive to changes in loading in both volume and quality of treated water. For these reasons, this alternative is not discussed further, although it may be the subject of consideration in the future if necessary.

10.7 Preliminary engineering appraisals indicate that the best option is for the MSA to be connected directly to the Maidenhead STW at Bray Wick.

10.8 Thames Water own and operate Maidenhead STW. It will therefore be necessary to discharge effluent into the STW, at a balanced rate in agreement with Thames Water.

10.9 The Hydraulic Loading for the MSA has been estimated from historical data from existing operational MSAs; such estimates have been accepted by several other Water Authorities/Companies in the past.

10.10 Linking the MSA with Maidenhead STW should be progressed by direct methods. This would involve pumping effluent via a pumping main to the STW across open countryside and along the line of the public highway.

10.11 The disposal of entirely domestic balanced effluent from the MSA to the Maidenhead STW, is in accordance with standard practice. This approach will mean that there is no environmental impact on adjoining watercourses.

10.12 Drainage from the Fuel Filling Station and petrol tanker areas will discharge via a 3 stage fuel interceptor with capacity to accommodate a spillage incident involving a tanker.

10.13 All discharges from the Maidenhead STW into the receiving watercourse will be the subject of a "Consent to Discharge", regulated by the EA and to a quality which will be maintained by TWU.

Storm Water Disposal

10.14 The application site, currently a green field site, occupies some 13ha, of which approximately 3.5 ha will become hardsurfaced eg. roads, buildings and parking areas, whilst the remainder is designated for landscape and woodland areas.

10.15 The areas of hardsurfacing will have the effect of increasing surface water run-off. It is proposed to attenuate this increase in run-off by the introduction of a balancing lake and associated flow control, using a standard flow throttling device. The run-off from the MSA will be balanced to equate to the existing "green-field" run-off so that the rate of flow at the outfall will not be increased from that currently experienced.

10.16 The site naturally drains towards the River Bourne to the east of the site and preliminary appraisals suggest that the run-off will be connected to the River which eventually discharges into the River Thames.

10.17 The EA have stipulated design parameters for attenuation and flow. The design criteria stipulated by the EA are:

- allowable storm water discharge restricted to an equivalent greenfield run-off generated during a 1:25 year storm;
- attenuation on the site to avoid surface flooding during a 1:25 year storm return.

10.18 In order to comply with the requirement of "no visible oil" to be discharged into a receiving watercourse, "trapped" road gullies and storm by-pass interceptors will be used for storm water run-off from hardsurfaced areas.

10.19 Provisions will be made during construction to prevent the discharge of polluted storm water, foul effluent and fuel to all water courses.

Ground and Surface Water Quality

10.20 Information has been obtained on the existence of aquifers, groundwater sources and groundwater protection zones. The site is considered to be underlain by strata classified as a minor aquifer as shown on the "Groundwater Vulnerability of West London" Sheet 39. Also located under the site is a major aquifer found in the Greensand which is at depth below the chalk.

Groundwater Abstractions

10.21 There are no licensed abstractions either within the site or in the vicinity of the site. In any case, appropriate measures are proposed for preventing leakage from fuel stores and pipework to prevent the integrity of the groundwater being compromised. There are therefore no problems likely to arise from contamination of groundwater sources.

Surface Water

10.22 Monitoring data from the closest monitoring sites, within 1.5km of the proposed MSA location, was obtained for the following streams: Maidenhead ditch, Hibbert Road, Bray; The Cut, Cannon Hill, Bray Wick; Chawbridge Bourne, adjacent to A330, Bray and also Heywood Stream. The data indicates that the streams generally fall into River Ecosystems Class 2 and 3. These do not constitute the most sensitive category of water course.

Conclusion

10.23 The existing hydrological regime will be affected by the proposals. The scale of these effects has been assessed and appropriate mitigation measures proposed. With the implementation of the mitigation measures there will be no significant adverse impact on either the quantity or quality of the surface water and groundwater regimes.

10.24 Foul water will be treated off-site under arrangements to be agreed by Thames Water. There are no predicted adverse impacts connected with the treatment of foul water from the development.

PART ELEVEN ARCHAEOLOGY AND CULTURAL HERITAGE

Introduction

11.1 An archaeological study has provided a summary of the known archaeological information in and around the application site. From this information an assessment of the archaeological importance of the development area has been made.

11.2 The sources of information used in the study include: the County Sites and Monument Record, historic maps (including tithe maps) and aerial photographs; the County Archaeologist was also consulted. The site has been visited to assess present conditions for any physical indication of archaeological evidence.

Sites and Monuments Record

11.3 Examination of the County Sites and Monument Record (SMR) has identified only one site or findspot within the application site (SMR2603). This consists of a series of six large stones recorded in a gas pipe trench by the Maidenhead Archaeological and Historical Society in 1963. No other archaeological finds or further information regarding the date or interpretation of the feature are recorded, no records exist in Reading Museum concerning this possible feature.

11.4 The SMR site within the application area can be considered of limited archaeological potential. It is possible that the stones were mistaken for a natural deposit within the sub-soils.

11.5 Apart from the SMR within the site, a number of findspots and sites are identified in the surrounding area. Because of the age of Holyport, a number of buildings and remains of buildings are identified within the settlement. These sites include Medieval moated and manorial sites which are recorded in the areas around Cresswells Farm, to the east of the application site.

11.6 Among the findspots are recorded Bronze and Iron Age pottery, a silver Roman coin and deposits of Romano-British pottery.

Conservation Area

11.8 The boundary of the Holyport Conservation Area incorporates Cresswells Farm and the intervening open land between Holyport village and the Farm. This open space is important to the character of the Conservation Area.

11.9 The landscape boundary of the MSA will ensure that publicly accessible views of the development are extremely limited. From within the Conservation Area, the only accessible viewpoint is from the footpath between Ascot Road and Cresswells Farm at the point where the footpath meets the boundary of the Conservation Area. Even at this point, only views of the upper part of lighting columns and filtered views of the existing motorway junction in its modified form will exist.

11.10 Cresswells Farm house is a listed building within the Conservation Area. The orientation of the building is to the east and south. The western elevation facing towards the MSA forms the rear of the building, having fewer windows and faces into the farmyard. It is cut off from the MSA site by the agricultural buildings along the western edge of the farmyard. In effect, these form the westward extent of the setting of the listed building. The substantial hedgerow forming the eastern boundary of the MSA site further separates the MSA site from the farmyard. The extensive landscaping proposed for the MSA along with gentle ground contouring will further screen and separate the developed part of the MSA site from Cresswells Farm.

11.11 To the north of the farmyard, just within the Conservation Area boundary, is a large, modern agricultural building. This visually dominates the northern edge of the farmyard, separating the listed building from the area of the proposed new access ramp from Junction 8/9 down into the MSA. Extensive evidence by the Council's Conservation Officer and by a listed buildings specialist at the previous Public Inquiry onto an earlier MSA proposal left the Planning Inspector with the conclusion that the MSA proposed (which on that occasion was larger as it served east and westbound traffic) did not adversely affect the Holyport Conservation Area or the setting of the listed building of Cresswells Farm. The landscape treatment with this scheme offers the same mitigation and the circumstances surrounding Cresswells Farm and the Conservation Area have not changed. It is concluded, therefore, that there is no adverse effect on the Cresswells Farm and the Conservation Area.

Historic Maps and other Records

11.12 The Berkshire Record Office has been visited and historic maps and other records were consulted. These documents provided little additional information for the study. The First Edition Ordnance Survey map of c1880 shows the location of Cresswells Farm under its original name, Philberd's Farm.

Aerial Photographs

11.13 The most common features identified from aerial photographs are traces of ridge and furrow cultivation and early field boundaries. These features predominate on land immediately to the west of Holyport and around Thimble Farm. No features are evident on the application site.

Conclusions

11.14 The archaeology and cultural heritage assessment indicates that the site is largely free of any archaeological interest. The site contains only one SMR entry and the current evidence suggests that this is not of major significance. Within relatively short distances of the site, however, there is evidence for Romano-British and Medieval settlement as well as prehistoric deposits.

11.15 A specification for the implementation of measures during construction was agreed at the time of the previous planning application with the County Archaeologist. The same specification is considered appropriate for this application.

11.16 There will be no adverse effects on the Conservation Area or the Grade II listed building at Cresswells Farm, as the existing vegetation and proposed planting separates and screens the MSA from the Conservation Area. Cresswells Farm is situated away from the site and is well buffered. There will be no adverse effects on Conservation Area issues.

PART TWELVE AGRICULTURE

Introduction

12.1 This section of the Environmental Statement assesses the loss of agricultural land in relation to the land quality of the site and the effect on the viability of the agricultural unit.

Land Quality

12.2 Central Government Guidance on the Countryside and Rural Economy is contained in Planning Policy Guidance (PPG) note 7. The PPG states that the local planning authority is required to consult the Ministry of Agriculture and Food (MAFF) concerning developments not conforming to the development plan, when the proposal is likely to lead to more than 20ha of land graded 1, 2 and 3a being prematurely lost to agriculture. These grades indicate the best quality land, being the most flexible, productive and efficient in response to inputs.

12.3 The total area of the application site is only some 13 ha. Of this area only approximately 3.5 ha is hard surfaced and therefore permanently lost from agricultural production. This is well below the level of land loss which would be regarded as strategic and likely to elicit an objection from MAFF.

12.4 The site is currently managed independently from any larger farm unit. It is used for the production of high quality grass which is subsequently used to supply turf.

12.5 Whilst development of the site would cause the production of turf to be halted, this would not affect the viability of any larger agricultural unit.

Conclusion

12.6 The total area of the site is 13 ha, of this only some 3.5 ha is hard surfaced and would therefore be permanently lost from agricultural production. This does not constitute a strategic loss of agricultural land to which MAFF might object.

12.7 The development of the site will not affect the viability of a larger farm unit although the turf production activity will be halted.

12.8 The are therefore no agriculture issues raised by these proposals.

PART THIRTEEN CONCLUSIONS

Introduction

13.1 This final part of the Environmental Statement provides a summary of the potential and predicted impacts, a summary of the mitigation measures to reduce the effect of predicted impacts and any residual impacts which remain after effective mitigation measures have been implemented.

13.2 Potential impacts are those which the assessment has identified as possible but unlikely to occur, whereas predicted impacts are those which are expected to arise. Beneficial as well as adverse impacts are included. The mitigation measures have been drawn up as a table showing a programme of how the measures will be implemented.

Summary of Potential and Predicted Impacts

Primary Issues

13.3 The scoping exercise carried out in the early stages of the EIA established that Transportation/Highways, Landscape/Visual and Socio-economic impacts were primary issues while the others were secondary issues.

Transportation and Highways Impact

13.4 As with any development project there is the potential to cause an amount of traffic disruption during the construction stage. For this proposal, access to the site by construction vehicles can be achieved from the motorway system which has the capacity to accommodate these movements. Some lane closures may be required during alterations at the junction roundabout during construction of the dedicated slip roads. The predicted traffic disruption during building construction is generally considered to be insignificant while the disruption caused by road alterations could be of moderate to high significance.

13.5 The proposals include provision of dedicated access roads to and from the MSA. These measures have been designed to complement the potential of Highways Agency improvements to enhance traffic flows through the junction. During 2010 the provision of dedicated slip roads to the proposed development is predicted to achieve an overall improvement in the performance of the junction during the peak period flows of traffic.

13.6 There is no need to dispose of excess soil away from the site as it will be used in ground contouring, therefore minimising traffic movements during construction to building materials, building plant, equipment and employees.

13.7 From the assessment of traffic and highways considerations, it is concluded that the provision of a new westbound MSA at Junction 8/9 of the M4 will comply with Government Guidance on the provision of MSAs and further enhance the highway safety on this stretch of the motorway network. There is a shortage of existing MSAs on this combined section of the M25 and M4 motorways and a new westbound MSA at this location will assist in meeting this need. The Highways Agency has previously confirmed that the access roads to this MSA site are adequately spaced from all existing MSAs. In conclusion, the proposals will not have an adverse effect on the existing highway network, indeed, the associated off-site alterations will increase the operational capacity of the junction and extend its design life.

Landscape and Visual Impact

13.8 A key part of the landscape and visual assessment was the visibility study that examined a range of possible views of the site, from close range and further afield. For a scheme of this nature, the close and medium range views of the proposed development will be limited.

13.9 Close range views are comprised of those from footpaths in the area south and west of the site, where they are well obscured by established hedgerows. Views from slightly further away are rapidly obscured by the amount of intervening vegetation, the site is therefore not visible from houses on the edge of Holyport. Overall, the effect on the amenity of the footpaths is not considered to be more than slightly significant.

13.10 There are potentially wide views across the site from the elevated motorway junction and westbound slip road, however, the embankments, which are well planted, partly screen the view from car drivers here as well as from the east bound M4 carriageway. The impact of the Service Area on these views is considered to be of moderate significance.

13.11 Views from the north and east are limited by several blocks of mature woodland and by the raised earthworks of Junction 8/9. Rising ground between Cox Green and Bray Wick and a footbridge over the A404(M) provide a few slightly elevated viewpoints that look towards the application site. The woodland and junction earthworks are of sufficient height to screen these views to the extent that the visual impact is considered to be negligible.

13.12 In terms of landscape character and setting, the site is located close to the motorway and associated infrastructure of the Junction 8/9 interchange as well as the nearby presence of a large conurbation. Although the site is open and undeveloped and is situated within Green Belt, its character is significantly influenced by these various forms of development and activity. Lighting arrangements will be designed to ensure adequate and safe lighting whilst minimising the effects of light pollution in the open countryside.

13.13 The development of a new Motorway Service Area on a previously undeveloped area of land without mitigating measures would undoubtedly add to and increase the influence of development on the area, reducing to some degree the open character and reducing such rural qualities that the area currently has. The planting of woodland belts around the site will change the character of the site, but woodlands are a feature of the area and the change in character will not be significantly adverse. The overall conclusion of the landscape and visual impact assessment is that with sensitive site planning and effective mitigation measures the proposed development can be accommodated on this site with only limited effects of slight to moderate significance.

Socio-economic Impact

13.14 Studies and research for the Highways Agency have shown that motorists need to stop because they are too tired or stressed to continue their journey safely without taking a break and can be assisted by the provision of more services. The MSA will provide an opportunity to stop when the need arises rather than have to continue driving. This is likely to reduce the risk of accidents on the motorway and road network, and be beneficial in reducing the financial and human costs associated with accidents.

13.15 It is estimated that the construction phase, although short lived , will generate in the range of 75-100 full-time equivalent jobs in the contracting and fitting out sector. There may also be a small scale multiplier effect with supplies and equipment being obtained locally. When in operation the Service Area will sustain between 100-130 full-time equivalent jobs as well as employment that will be generated for suppliers and maintenance contractors.

13.16 The provision of slip roads to the MSA will extend the time over which Junction 8/9 will accommodate increasing levels of traffic as part of the Highways Agency proposals for motorway improvements. The work by the applicant will therefore be beneficial, representing a cost saving of public expenditure. The amenity of well used footpaths and bridleway near the site will not be detrimentally affected.

Secondary Issues

Noise and Emissions to Air

13.17 The effects of noise arising from the site have been considered for both the construction of the site and during operation, by taking noise readings and using calculation. During construction, measures can be employed to control high intensity noise at source. The buildings, which are the main construction task, are located on the northern part of the site near to the motorway. Noise from the motorway will have a significant effect in masking the noise emanating from the site during construction.

13.18 The results of the noise assessment were that any increase in noise levels at Cresswells Farm, the only property nearby, due to the operation of an MSA would not be significant. With the traffic noise from the M4 and Junction 8/9 dominating the local noise environment, it is unlikely that the inhabitants of the Farm would perceive any additional noise created by an MSA at the application site which will increase noise by only 1 dB(A). The proposal will have no adverse effect on the present level of emissions to air from vehicle exhausts within the motorway corridor. The effects of dust during construction will be minimised by water spraying.

Ecology and Nature Conservation

13.19 The development proposal will affect the fields currently used for turf production, these are however of no significance to nature conservation. The new access slip roads constructed to and from the junction will affect part of the scrub and grass habitat which has developed on the embankment and is of local value for wildlife. This habitat can be replaced and extended over a wider area in the landscape scheme for the embankments created for the new access road. Existing hedges will remain in the design of the scheme, and with additional planting, a more diverse and valuable habitat will be created. The proposals will therefore have no significant adverse impact on nature conservation. The potential exists to provide a positive benefit by using sensitive landscape

planting in order to maximise the ability of the area to support wildlife. A nature conservation area proposed to the west of the site will be a positive effect on nature conservation.

Drainage and Water Quality
13.20 Foul water will be removed off-site for treatment and disposal without compromising the capacity of the receiving system. The potential of an increase in surface water run-off will be addressed through provision of a balancing lake which will be designed to release water at a rate equivalent to no more than the existing green-field run-off. With the implementation of the proposed mitigation measures, there will be no significant adverse impact on either the quantity or quality of the surface water or groundwater regimes.

Archaeology and Cultural Heritage
13.21 The archaeological assessment of the site indicates that it is largely free of any archaeological interest. The site contains only one SMR entry and the current evidence suggests that this is not of major significance. Within relatively short distances of the site there is evidence of Romano-British and Mediaeval settlement as well as prehistoric deposits. On this basis it is possible that artefacts of local importance may be present in the soils within the site area. An agreement of a watching brief with the archaeologist of the local authority will remove what otherwise could be considered as an impact of slight significance.

13.22 The scheme has been designed to have minimal impact on nearby Listed Buildings and the Conservation Area. There is only one place within the Conservation Area accessible to the general public from which the scheme will be seen, this is from the footpath between Ascot Road and Cresswells Farm. A substantial landscape strip is proposed between Cresswells Farm and the development to minimise the impact on the building and views from the footpath. The listed building is orientated away from the site and separated from it by agricultural buildings which will buffer and separate the MSA scheme, together with the proposed landscaping measures. The proposals will not therefore have any significant adverse effect on the Holyport Conservation Area.

13.23 While the development of an MSA will halt the turf production and remove 3.5 hectares permanently from agricultural production, this will not affect the viability of the farm unit or constitute a strategic loss of agricultural land. The development will not have any significant adverse effect on agriculture.

Summary of Mitigating Measures

Introduction

13.24 This section summarises the mitigating measures which are being taken to reduce, remove or compensate for any adverse impact. The illustrative layout shown at the beginning of this statement (Figure 3) represents a modified version of an original proposal after consideration of predicted and potential environmental effects which could be attributed to development of the proposed MSA. Design amendments to the scheme developed during the EIA, which was an iterative process. The mitigating measures will avoid or reduce many of the identified potential environmental impacts of the scheme.

Landscape

13.25 A number of mitigation measures have been employed in the design of the MSA to minimise the visual effect of the development on the site and views from surrounding areas.

Site Layout
13.26 The study of views towards the application site from surrounding areas reveals that some parts of the development site are more visible than others. The northern part of the site is the least visible, with the screening effect of the elevated motorway junction being of particular note.

13.27 All buildings will be situated well away from the more sensitive southern and western boundaries. The Amenity Building and the Lodge have been placed in the north central part of the site. The horizontal canopy of the Fuel Filling Station will be at about the same level as the Junction 8/9 elevated roundabout. By siting buildings in this way, their impact on the openness of the Green Belt of the character of the site is reduced.

13.28 The earth shaping and planting will act as an appropriate buffer between Cresswells Farm, publicly accessible footpaths and the development itself. An outdoor picnic area will be provided for users of the MSA. The surface water balancing lake will be situated close to the south-west corner of the site within a nature conservation area.

Form and Materials of the Buildings
13.29 It is proposed that the form and materials used for the main buildings will be selected to blend sensitively into the local surroundings resulting from a study of local characteristics carried out by the architects before the detailed design stage.

13.30 It is suggested that all the buildings, with the exception of the Fuel Filling Station, will have pitched roofs covered by tiles or slates. Brick would be used predominantly in external wall construction in order to blend with those found locally.

Mounding and Tree Planting
13.31 Extensive tree and shrub planting and some earth shaping are proposed around the development site. These are an integral part of the scheme, as shown on the Illustrative Layout in Figure 3 (Page 3).

13.32 The mounding will have a valuable function by ensuring that low level elements within the site will be completely screened. All the earth shaping would be densely planted with woodland trees and shrubs. The species used would be mostly native with particular reference made during their selection to locally occurring species and ground conditions.

13.33 The new woodland belt around the development site would be mostly planted as whips to achieve rapid establishment, but a percentage of larger semi-mature stock would be used to achieve an immediate effect.

13.34 The width and density of planting means that even in winter it would substantially filter and interrupt views towards the site, which are already well screened and filtered by existing vegetation.

Lighting
13.35 To minimise the effects of lighting the site at night, a range of mitigation measures have been incorporated into the design. These include using the minimum acceptable height for lighting columns, effective use of shielding on the lights and use of high pressure sodium units with flat undersides to reduce side-glare. Earth mounding and tree planting will further reduce this impact and these elements will become increasingly effective as the new landscape vegetation around the site matures.

Transportation and Highway Issues

13.36 The proposals incorporate the provision of dedicated slip roads designed to be complementary to potential Highways Agency improvements to the roundabout at Junction 8/9 and will minimise any adverse effect of the development on road users.

13.37 The internal layout of the MSA is designed to the relevant standards set out by the DETR, safe access and circulation of vehicles within the site is therefore assured.

13.38 The proposal itself will add a new MSA facility to provide a refuelling, rest and refreshment area for motorway users, thereby improving the level of overall safety on a part of the motorway network where such facilities are currently lacking.

Noise

13.39 Mitigating measures are proposed, in the form of earth mounding with tree and shrub cover, to ensure that there will be no perceptible increase in noise levels at the nearest residence, Cresswells Farm House during the hours of principal motorway use. The detailed specification of the mounding is to be agreed with the Environmental Health Officer.

13.40 The periods when construction will take place will coincide with the periods of high traffic noise on the motorway. Outside of these normal working hours it will be necessary for the Contractor to agree with the Environmental Health Department how arrangements for this work will take place.

Emissions to the Air

13.41 It has been calculated that air pollution from motor vehicles will not adversely affect existing levels within the motorway corridor. Mitigating measures will include the use of equipment to dampen down road surfaces in dry conditions in order to minimise dust dispersal from the site during the construction period.

Ecology

13.42 The site is of extremely low nature conservation value, with some very local interest confined to the motorway junction embankment and the surrounding hedgerows. These features will be retained except for the parts of embankment which will be altered to allow for construction of the access roads to the site. The access road will be designed to provide subsequent replacement of an increased area of habitat for the communities displaced by construction. Extensive planting of native vegetation will also be undertaken on the earth mounding around the periphery of the site. A proposed nature conservation area west of the site will be a major mitigation measure, providing a positive nature conservation benefit.

Drainage and Water Quality

13.43 The increased surface water run-off from the site will be regulated by the construction of a surface water balancing lake. Discharge from the site will therefore take place gradually to the existing water course which runs eastwards to the River Bourne.

13.44 Water quality will be safeguarded due to all of the roads on site being provided with trapped gullies, whilst parking areas will discharge via storm by-pass interceptors. Drainage from the Fuel Filling Station and petrol tanker areas will discharge via a 3 stage fuel interceptor with capacity to accommodate an incident involving a fuel tanker.

13.45 Bunding of fuel tanks and health and safety procedures both during construction and operation will be used to ensure that materials stored on the site do not pollute groundwater or nearby streams.

Archaeology and Cultural Heritage

13.46 Excavation during construction will be undertaken to examine and record any finds. A specification for this will be agreed with the archaeological consultant of the planning authority.

13.47 The scheme has been designed to have minimal impact on nearby Listed Buildings and the Holyport Conservation Area. There is only one part of the Conservation Area from which the scheme could potentially be seen. A substantial landscape strip is proposed between Cresswells Farm and the development to minimise the impact on the listed building and views from the footpath.

Agriculture

13.48 The scheme has been designed to occupy the minimum amount of agricultural land. The total agricultural land loss is consequently substantially below that which is regarded as a strategic land loss and therefore no mitigating measures are required.

Implementing Mitigating Measures

13.49 The table shown in Figure 19 (Page 35) illustrates a summary of all the scheme's mitigation measures, including both mitigation which is inherent in the design and additional measures. The table also sets out basic information referring to the timescale and as to how the mitigation is intended to be implemented and the mechanism for ensuring this mitigation is carried out.

Sustainability

13.50 While not a specified requirement of the Environmental Impact Assessment Regulations, a summary of sustainability issues in relation to the proposed development has been included.

13.51 The development of facilities for motorists to rest can contribute towards a reduction in traffic accidents and the associated cost in financial and human terms.

13.52 The provision of facilities within the road corridor is more sustainable than the situation where motorists have to leave the motorway network and travel on local roads to find facilities. The Lodge element of the scheme will provide accommodation for drivers needing a break in travel between destinations, the motorway location allowing a shorter journey, consuming less fuel.

13.53 Semi-permeable parking surfaces will allow some infiltration of surface water to local ground water and also moderate the volume of surface water run-off fed to the water balancing lake in the nature conservation area. The scheme also includes considerable potential to increase the area and diversity of wildlife habitat. Landscaped areas have a beneficial effect on air quality and climate.

13.54 Development of an MSA in a position adjacent to an existing junction has the benefit of imposing the least impact on the surroundings in terms of visual, lighting, sound and landscape impact, loss of land through provision of slip roads, and also the facility will not prejudice motorway widening if required in the future.

Residual Impacts

13.55 Even with this visually well screened site, effective mitigation measures and the proximity to the M4 junction, it is unavoidable that development of an MSA on what is currently open space will reduce to a limited extent the open character of this Green Belt area. Addition of a further source of artificial lighting to the area will occur although positioned in the context of an area already lit by motorway development.

13.56 Noise is an unavoidable consequence of construction and will be apparent at the nearby Cresswells Farm intermittently during this temporary period. The construction of slip roads to the MSA may result in some temporary interference to traffic movement along the M4 slip roads and junction roundabout.

13.57 Construction of the slip roads will require prior removal of the existing vegetation on the embankment. There will be no significant quantity of green waste arising from this work. The small amount of green waste which will result from clearance will be recycled at a local facility, there will be no burning of green waste on-site.

13.58 A limited loss of low grade agricultural land will result from MSA construction, although this is not significant and would not raise objection from MAFF.

CONCLUSION

13.59 The assessment has shown that the proposed MSA has no significant adverse impact on the identified environmental issues.

13.60 Some minor impacts that have been identified have either been removed or reduced through design, others can be removed or safeguarded by the mitigating measures proposed in this Environmental Statement.

13.61 The scheme has a number of significant advantages, these include:

- providing facilities for motorists using sections of nationally important strategic traffic routes where such facilities fall below the advisory safe spacing;
- enabling motorists to find accommodation enroute, thereby avoiding trips off the motorway, saving fuel, pollution and congestion;
- providing benefits in terms of improving highway safety;
- creating between 100 and 130 full time equivalent jobs; and
- providing an enhancement of the wildlife value to the peripheral areas of the site and adjoining land.

13.62 This is a necessary form of development, to meet an identified need on this stretch of the M4 /M25 motorway route for additional services, in order to comply with guidance on safe MSA spacing. The conclusion of this assessment is that the proposals can be suitably accommodated on this site without any significant adverse environmental impact, whilst delivering a number of important benefits.

13.63 It remains for the Planning Authority and the consultees to conclude that the proposed westbound Motorway Service Area at Junction 8/9 of the M4, Maidenhead is acceptable in terms of its environmental impact.

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Mitigation Measure	Page No.	Environmental Issue	Implementing Agent	Legal Instrument	Compliance Target	Implementation Timescale
Siting of Amenity Building and Lodge at the north of the site. Siting of Fuel Filling Station against the access road and interchange embankment	3	Landscape and Visual Impact	Developer, operator and building contractor	Outline and Reserved matters approval	Siting as proposed in ES	During planning, design and construction
Choice of Building Materials	21	Landscape and Visual Impact	Developer, Architect	Outline and Reserved matters approval	Visual impact minimised	During planning and design
Landscape design and planting with future maintenance programme	21	Landscape and Visual Impact Ecology and nature conservation Noise	Landscape architect, landscape contractor, MSA operator	Outline and Reserved matters approval Planning conditions	Visual impact minimised, ecological enhancement as in ES. Reduced noise impact. Replacement of failed trees and shrubs	First planting season after major part of construction work. Ongoing review and maintenance
Nature habitat creation and enhancement	29	Ecology and nature conservation Landscape and Visual Impact	Developer, Consultant ecologist, landscape architect and MSA operator	Planning Condition	Ecological interest to be managed in accordance with the ES	During construction and ongoing operation of the MSA
Provision of petrol/oil interceptors	30	Drainage and Water Quality	Developer, building contractor and MSA operator	Planning Condition	Avoidance of water pollution	During construction and ongoing operation of the MSA
Provision of water balancing pond	30	Drainage and Water Quality	Developer, building contractor and MSA operator	Planning Condition	Avoid overloading natural water drainage system	Early stages of construction and subsequent monitoring
Choice of lighting units of appropriate height and type with cut-off shields	22	Landscape and Visual Impact	Developer and MSA operator	Planning Condition	Visual impact minimised as in ES	During construction and ongoing maintenance of MSA operation
Construction working hours restrictions	27	Noise	Developer, building contractor and MSA operator Environmental Health Officer	Planning Condition	Agreement with Environmental Health Officer, construction noise impact minimised	During construction
Use of wheel washers and bowsers during construction	27	Air Quality	Developer, building and haulage contractors Environmental Health Officer	Planning Condition	Reducing dust impact off-site and mud tracking onto highways	Wheel washer installed at the beginning of construction period, bowser used during construction
Safe Storage of Materials	30	Drainage and Water Quality	Building contractor Environmental Health Officer	Planning Condition	Avoidance of water pollution	During construction
Watching Brief with Archaeologist	31	Archaeology	Developer, building contractor and landscape contractor Archaeological consultant	Planning Condition	Recording and preservation of any archaeological artefacts	During construction

Figure 19: Mitigating Measures

Internal Landscaping at Granada's
Cherwell Valley MSA





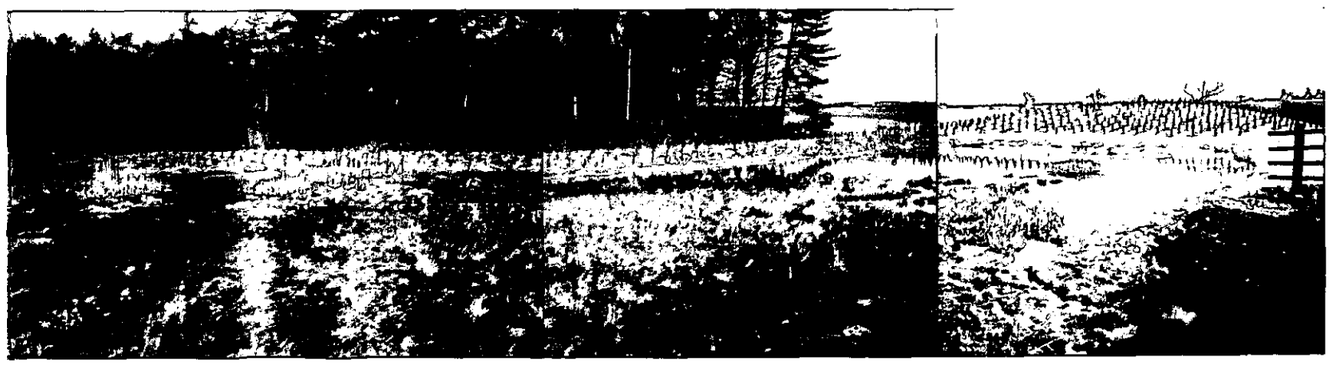




The Off-Site Balancing Pond
at Cherwell Valley MSA

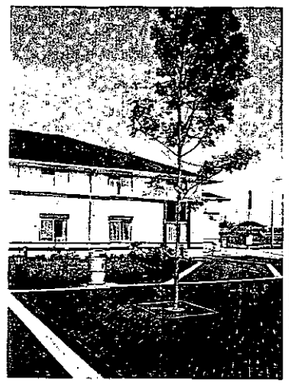


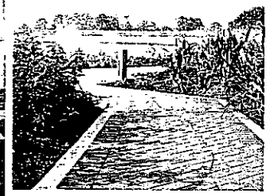




Photographs taken in second year following completion

A similar scheme, Stafford Service Area on the M6, was approved in 1994, mid way between Keele and Hilton Park Service Areas, in a 29 mile gap. An exception was made to normal planning policy to meet the need for an essential service. Traffic volumes were 90,000 vehicles per day.



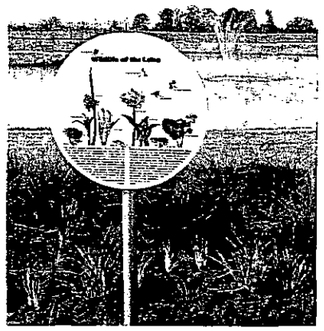


Details of amenity building, lodge, play area and associated landscaping

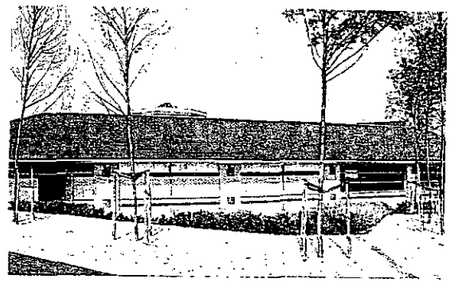


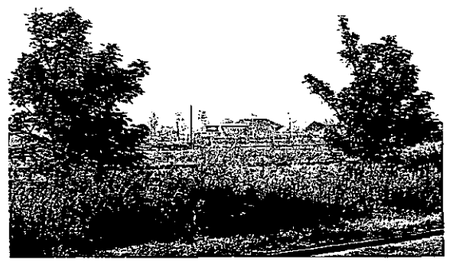


Amenity building, lodge and lake

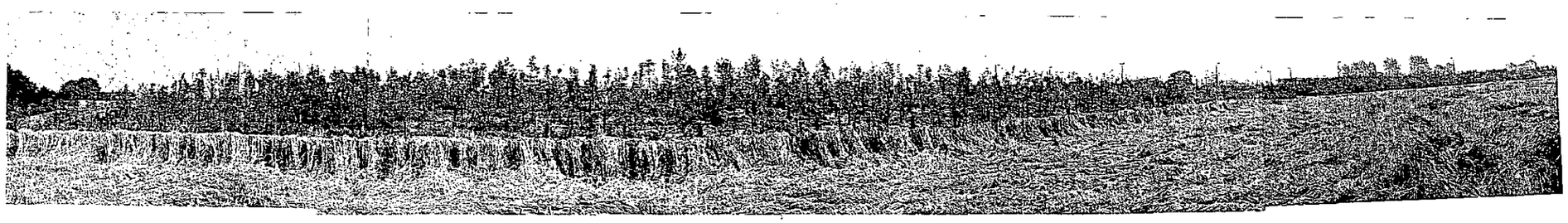












View from the surrounding countryside - 1st year after planting



Eye level view of 3.5m high landscaping around the fuel filling area



Low height, high intensity sodium lamps at the fuel filling station

Photographs taken in first year following completion

01/36785

Proposed Westbound Motorway Service Area

Juction 8/9 M4
Maidenhead
Berkshire

Non Technical Summary

- 5 MAR 2001
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NON TECHNICAL SUMMARY

Introduction

1 An outline planning application has been submitted to The Royal Borough of Windsor and Maidenhead for a westbound Motorway Service Area (MSA) at Junction 8/9 of the M4, near Maidenhead.

2 This document is a summary in non-technical language of an assessment of the effects of the proposed scheme on the environment and the measures taken to reduce any adverse effects. These studies have been undertaken by a team of consultants, whose findings are set out in full in the Environmental Statement.

The Site

3 The site is located immediately to the south west of Junction 8/9 of the M4 motorway, as shown in Figure 1. The application site is currently in use for turf production and has a total area of 13 hectares.

4 The site is generally flat and at the same level as the main carriageway of the M4, with the motorway junction being elevated some 4-5 metres above the site. The extent of the site is defined by existing field boundaries marked by mature hedges and some trees.

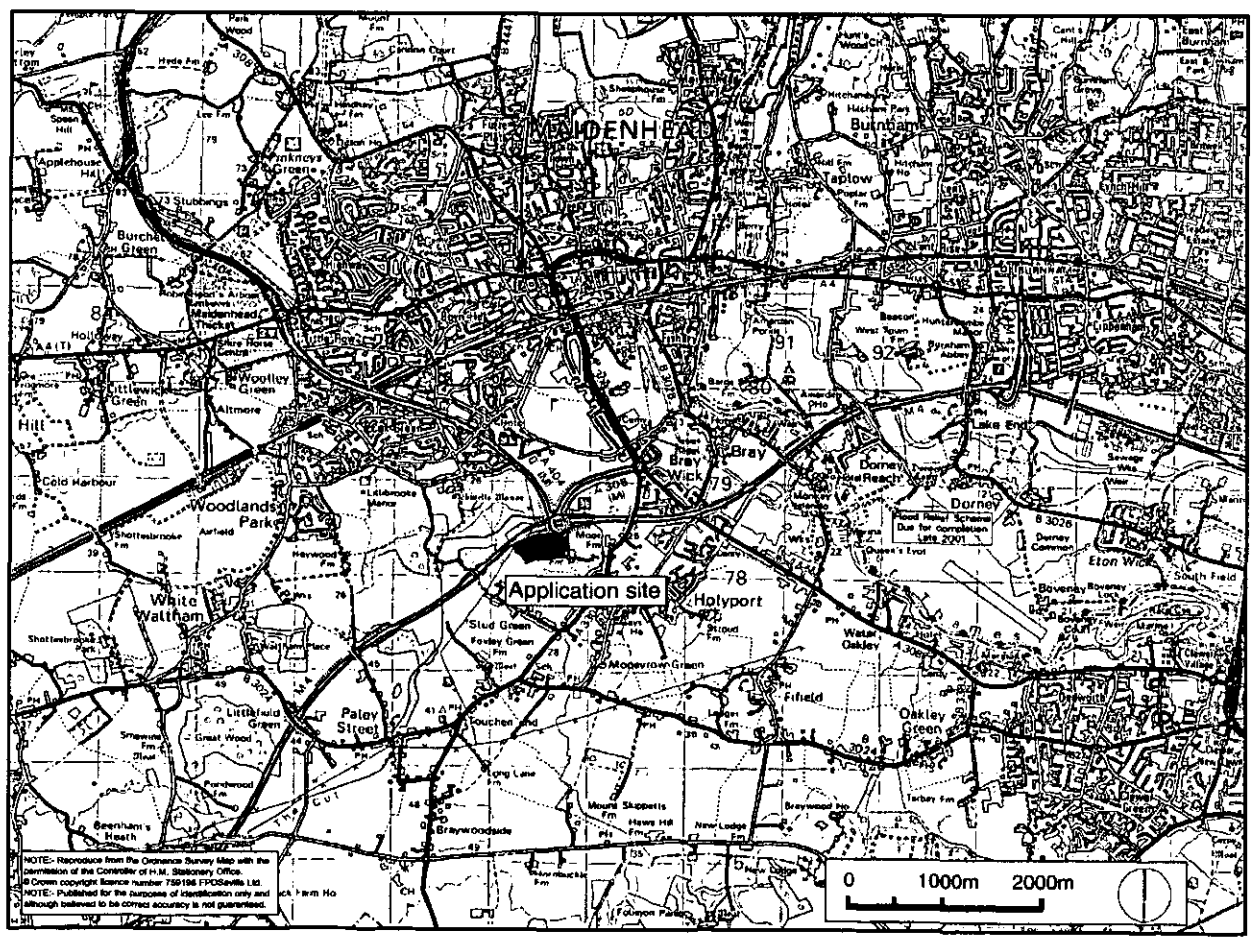

Figure 1: Location Plan

Government Legislation

5 In 1992 the Government changed the legislation relating to the provision of Motorway Service Areas. This enabled MSAs to be initiated by the private sector, whereas previously they could only be promoted by the Department of Transport. Current Government policy broadly seeks provision of an MSA approximately every 30 miles (48 km) in order to provide drivers with adequate opportunities to stop and rest. More frequent spacing is acceptable in certain circumstances, listed in the Government guidance.

6 Compared with the minimum advisory spacing of 30 miles (48 km), this section of the westbound M4/M25 motorway network is currently under-provided. A driver travelling west on the M4 in the area of Maidenhead, having also used the M25 for part of their journey may currently cover a distance of over 60 miles (96 km) without the opportunity to rest at an MSA; twice the advisory distance. The shortfall in provision is compounded by the fact that this section of the M4 experiences very high levels of traffic. Several planning applications for new MSAs on the M25 have recently been refused.

The M4 Motorway

7 The M4 was constructed during the 1970s. It has become a heavily-used strategic motorway route between London, Bristol, the South West and South Wales. The importance of the motorway is confirmed by very high daily traffic figures, in 1998 approximately 186,100 vehicles per day use the M4, A404(M) and A308(M) in the area of Junction 8/9

The Proposal

8 The outline planning application is for the development of an MSA to serve westbound M4 traffic only. The MSA would be accessed from the motorway via a dedicated slip road from the off-slip at the Junction 8/9 interchange.

9 An illustrative layout drawing demonstrating the proposed scheme is shown in Figure 2.

10 The main elements of the scheme are as follows:

- an Amenity Building of some 1600m^2 containing a self-service foodhall, waitress and fast food restaurants, retail shop, amusement area, public telephones and toilets/showers;
- a Lodge with 100 bedrooms;
- a Fuel Filling Station;
- picnic and play areas; and
- car, lorry, caravan and coach parking for approximately 391 vehicles.

The Choice of the Application Site

11 There are several reasons for the choice of this site, and an understanding of these is important to both the planning application and the Environmental Statement.

12 A number of factors influence the choice and availability of a suitable site for accommodating a new MSA facility. These factors include:

- spacing from existing MSAs - the minimum advisory spacing between MSAs, as contained in Guidance issued by the Government, is 30 miles (48 km);
- spacing of 15 miles (24 km) is acceptable in certain circumstances;
- spacing from motorway junctions - the Highways Agency will not normally approve an access for an on-line MSA, ie. one accessed direct from the motorway via slip roads, within 2 km of an existing motorway junction;

- Green Belt - Government planning guidance contains a general presumption against locating MSAs in the Green Belt unless no alternatives exist outside the Green Belt or other areas of statutory planning constraint;
- a full consideration of environmental issues as contained in Government advice and regulations on Environmental Assessment;
- the lack of MSAs on the M25;
- recent planning refusals on the M25;
- a site located to meet the need for MSA facilities;
- a site with the least environmental impact and least visual intrusion in the countryside.

13 Analysis of these factors shows that the application site at Junction 8/9 is the most appropriate location for a new MSA on this stretch of the M4 and that a facility here will assist in meeting the shortfall of MSAs on the M25. It is particularly well suited to meeting the needs of westbound traffic.

Defining the Environmental Issues

14 Analysis of the site and consultation with the Local Planning Authority has determined that the following environmental issues need to be assessed:

- Landscape and visual impact
- Transportation and highways
- Socio-economic
- Noise and emissions to the air
- Ecology and Nature Conservation
- Drainage and water quality
- Archaeology and Cultural Heritage
- Agriculture

15 Of these issues, three are regarded as being of primary importance. First, the visual impact of the development in the general landscape from publicly accessible viewpoints and nearby properties. Second, the transportation and highway considerations, which relate to both the M4 motorway and the operation of Junction 8/9. Thirdly, the socio-economic issues which could result from development.

16 Secondary issues include the effects of surface water drainage from the site on the hydrology and quality of water courses in the vicinity. These have been addressed, along with the method of disposing of sewage from the development. Safeguarding measures for managing a spillage or leakage of any materials stored on the site have also been considered.

17 The effects of the development on noise, emissions to the air, ecology, archaeology, cultural heritage and agriculture have also been assessed by a team of consultants.

Summary of Environmental Effects

18 Each environmental issue has been assessed to determine the effects of the scheme and identify possible "mitigation" measures (ie. steps that can be taken to remove, reduce or compensate for any adverse impact). The conclusions of the assessment are set out below.

Landscape and Visual Impact

19 The landscape and visual impact assessment has examined possible views of the site from a range of publicly accessible viewpoints. This assessment has determined that potential views of the site can be divided into three categories: close range, middle range and views from the M4 motorway and Junction 8/9. In each category it has been found that only very limited views of the site are available.

20 Close range views are limited to those from the south of the site. The topography to the south of the site is nearly flat with field boundaries marked by hedgerows. This vegetation obscures views of the site such that it is not visible from houses on the edge of Holyport. New tree planting will obscure views of the site from nearby footpaths.

21 Middle range views are limited to just a few viewpoints north of the site. Existing vegetation, as well as new planting and earth mounding included in the proposals, will obscure these views. The development will therefore have only a minimal effect on these viewpoints.

22 Views of the site from the motorway and Junction 8/9 are limited by the presence of existing vegetation. Planting on the embankment to the southern side of the junction screens views of the site, although views exist from the slip road where there is little intervening planting.

23 Dense vegetation to the east of the junction and the earthworks which comprise the junction itself limit views of the site for the westbound traveller. The east bound traveller has more of a view towards the site. Tree planting and some subtle earth contouring will screen these views.

24 A number of mitigation measures can be employed to minimise the visual effect of the new MSA. These measures include the siting of the built elements of the MSA away from the more visually sensitive southern and western boundaries of the site and the extensive tree and shrub planting and some gentle earth shaping around the perimeter of the site.

25 In relation to lighting, careful design including height restrictions and the use of directional lighting units, coupled with landscaping measures, will minimise light impact.

26 The development of a new Motorway Service Area on a previously undeveloped area of land will reduce its openness, and it will therefore weaken to some degree the open landscape character and such rural qualities that the area currently has. However, the effect in context of the proximity to the motorway, and to a lesser degree the other urban influences will not be significant on the landscape character of the area, due to the site being visually well contained.

27 The overall conclusion is that with sensitive site planning and mitigation measures as proposed, the development can be successfully accommodated on this site with only very limited effect, even when first constructed. As the woodland planting both within the MSA site and elsewhere in the application area matures, the development will be adequately screened from view.

Transportation and Highways

28 From the assessment of traffic and highways considerations, it is concluded that the provision of a new westbound MSA at Junction 8/9 of the M4 will comply with Government Guidance on the provision of MSAs. The Highways Agency has previously confirmed that the site is adequately spaced from all existing MSAs and willbe given MSA signing if planning consent is obtained. The purpose of an MSA is to provide essential facilities for drivers which are easily and readily accessible during their motorway journey, thereby improving road safety.

29 Access to the site will be via a dedicated slip road from the westbound M4 at Junction 8/9 into the MSA site, a dedicated slip road will also be used by those vehicles returning to the westbound M4. Other vehicles will return onto the road network via a new give way egress provided at the roundabout.

30 These measures have been designed taking into account the potential of proposals by the Highways Agency to enhance the capacity of the junction through carriageway widening and traffic signal modifications. The provision of dedicated slip roads for the MSA have been shown in analysis to provide some relief to traffic flow during peak hours.

31 The internal road layout of the MSA has been designed in a way which allows the safe circulation of traffic. All routes will be fully signed to further assist safe and easy access and manoeuvring through the site.

32 Access to the site for construction traffic will be from a temporary access created on the slip road leading from the Junction 8/9 roundabout to the westbound M4. Once the dedicated access road from the motorway interchange is constructed then construction traffic access will be from the motorway junction.

33 Lighting arrangements have been employed to ensure adequate and safe lighting whilst minimising the effects of light pollution in the open countryside.

34 In conclusion, the off-site work for the MSA cater for traffic redistribution without detriment to the existing highway network or the potential of Highways Agency proposals for junction improvements. Indeed, the associated off-site work will provide some relief to the operational capacity of the junction during peak hours and extend its design life. A major beneficial effect of the westbound MSA is the highway safety advantages of locating an MSA on this stretch of the motorway to provide rest, refreshment and refuelling facilities for part of the motorway network where such facilities are lacking.

Socio-economic

35 Surveys and research undertaken for the Department of Transport has shown that a proportion of motorway accidents are caused by fatigue or by drivers falling asleep at the wheel. Such accidents include a high proportion of fatalities and serious injuries. The research concludes that opportunities for drivers to break their journeys are to be recommended in order to reduce the chances of fatigue related accidents. The MSA will provide an opportunity to stop when the need arises rather than have to continue driving. This is likely to reduce the risk of accidents on the motorway and road network, and the associated financial and human costs.

36 It is estimated that the construction phase, although short-lived , will generate in the range of 75-100 full-time equivalent jobs in the contracting and fitting-out sector. There may also be a small scale multiplier effect with supplies and equipment being obtained locally. When in operation the Service Area will sustain the equivalent of between 100-130 full-time jobs as well as employment that will be generated for suppliers and maintenance contractors.

37 The road improvements will extend the time over which Junction 8/9 will accommodate increasing levels of traffic in conjunction with the Highways Agency's proposals. The funding of this work by the applicants will therefore represent a cost saving in terms of public expenditure. There are no identified adverse socio-economic effects.

Noise and Emissions to Air

38 The effects of noise arising from the site have been assessed for both the construction stage and during operation.

39 During construction, measures can be employed to control high intensity noise at source. The buildings, which are the main construction task, are located on the northern part of the site near to the motorway. Noise from the motorway will have a significant effect in masking the noise emanating from the site during construction.

40 The likely effects of noise on the environment when the MSA is operational have been assessed using methods employed by the Department of Transport for calculating road traffic noise. The assessment particularly examined the likely effect on Cresswells Farm, given its proximity to the site.

41 The results of the assessment were that the increase in noise levels at Cresswells Farm would not be significant. With the traffic noise from the M4 and Junction 8/9 dominating the local noise environment, it is unlikely that the inhabitants of the Farm would perceive the additional noise created by an operational MSA at the application site. The same applies to users of the footpaths near to the site.

42 The proposal will have no adverse effect on the present level of emissions from vehicle exhausts within the motorway corridor. The effects of dust during construction will be minimised by water spraying.

Ecology and Nature Conservation

43 The site is of extremely low nature conservation value, with only some very local interest confined to the motorway junction embankment and perimeter hedgerows. The proposals will retain the hedgerows and therefore have no significant adverse impact on existing wildlife habitat.

44 The scheme does present a number of opportunities to enhance the nature conservation value of the site. The embankment for the ramped access to the site will provide replacement and extended habitat for the vegetation displaced from the motorway junction embankment. The proposed tree planting on the site will mainly be of native species combined with areas of more open grassland sown with a mixture of native grasses and wildflowers. The surface water lake built for the excess run-off from the scheme will create an area of interest for nature conservation. These measures will achieve positive benefits for wildlife by extending the areas of habitat and increasing habitat diversity.

Drainage and Water Quality

45 In order to protect nearby water courses from pollution and flooding, a lake will be constructed on land to the west of the site to receive surface water run-off from the site. The lake will have the effect of regulating surface water flows from the site to the receiving water course, the River Bourne. All of the hard surfaced areas will discharge via storm by-pass interceptors to trap oil and other pollutants, providing additional protection for water quality.

46 Sewage will be piped to the Maidenhead Sewage Treatment Works at Bray Wick, where there is sufficient capacity to deal with the additional flow. The sewage from the site will go direct to the Works via a pumping main, with no effect on adjoining water courses.

47 Measures will be employed to prevent leakage from fuel stores and pipes at the fuel filling station to safeguard the quality of the ground water. No problems are therefore likely to arise in terms of ground water contamination.

48 Subject to these measures, any potential adverse effects on the adjoining watercourses will be removed or reduced and the risk of spillage or leakage into ground water will be minimised.

Archaeology and Cultural Heritage

49 Examination of archaeological records has revealed only one reference to a potential area of archaeological evidence on the site. The archaeological find within the site is of little importance itself.

50 Within relatively short distances of the site, however, evidence has been found from a number of historical periods, including prehistoric deposits. Further examination of the site will be undertaken should the consultant archaeologist of the local authority make this request. A specification for this has been previously been agreed with the archaeology advisor to the planning authority.

51 The site adjoins the Holyport Conservation Area and Cresswells Farm just to the east of the site including a Grade II listed building. Extensive studies at the time of a previous Planning Inquiry showed that with the siting of the development as shown and with sensitive tree planting and gentle ground contouring, there will be no adverse effects on the setting and character of the Conservation Area or the Listed Building.

Agriculture

52 Government guidance states that if a proposed development occupies in excess of 20 hectares of best quality agricultural land, this constitutes a strategic land loss which should be subject to comment by the Ministry of Agriculture Fisheries and Food (MAFF).

53 Of the total area of the planning application, some 13 hectares, only 3.5 hectares will be covered by hard surfacing within the MSA and therefore permanently lost to agriculture.

54 The proposals do not represent a strategic land loss likely to be of concern to MAFF.

Summary of Mitigating Measures

55 A range of measures have been included in the design of the scheme to "mitigate" any adverse environmental impact, ie. to reduce or to compensate for some effects.

56 These measures include the following:

- design and layout of the MSA which locates the buildings on the least visually sensitive part of the site to minimise visual intrusion;
- improvements to the motorway junction which will enable it to accommodate MSA traffic and extend the design life of the existing interchange;
- gentle earth contouring and extensive tree planting to visually screen the development and to reduce noise intrusion;
- the creation of enhanced wildlife habitat area on and adjoining the site, including planting of native tree and grassland species;
- regulating the flow of surface water from the site through a lake and the use of interceptors to protect water quality;
- the incorporation of low lighting columns and shields to prevent the sideways spread of light into open countryside;
- water spraying to reduce dust during dry construction periods; and the control of extractor fans and other equipment on the buildings to minimise noise generation from the development.

Conclusions

57 An appraisal of alternative sites has shown that the application site represents the best location for a westbound MSA serving traffic on this section of the motorway network.

58 The environmental assessment has shown that the proposed MSA has no significant adverse impact on the identified environmental issues. Such impacts as have been identified have either been removed or reduced by the careful design of the scheme, or safeguarded by the mitigating measures proposed.

59 The scheme also has a number of significant advantages including;

- providing facilities for motorists using nationally important strategic traffic routes;
- enabling motorists to find accommodation on route, thereby avoiding trips off the motorway, saving fuel, pollution and congestion;
- providing benefits in terms of increasing highway safety;
- creating between 100 and 130 full time equivalent jobs; and
- providing an enhancement of the wildlife value to the peripheral areas of the site and adjoining land.

60 The overall conclusion is that an MSA can be accommodated on the site without any significant adverse environmental impact whilst generating a number of important benefits for motorway users.

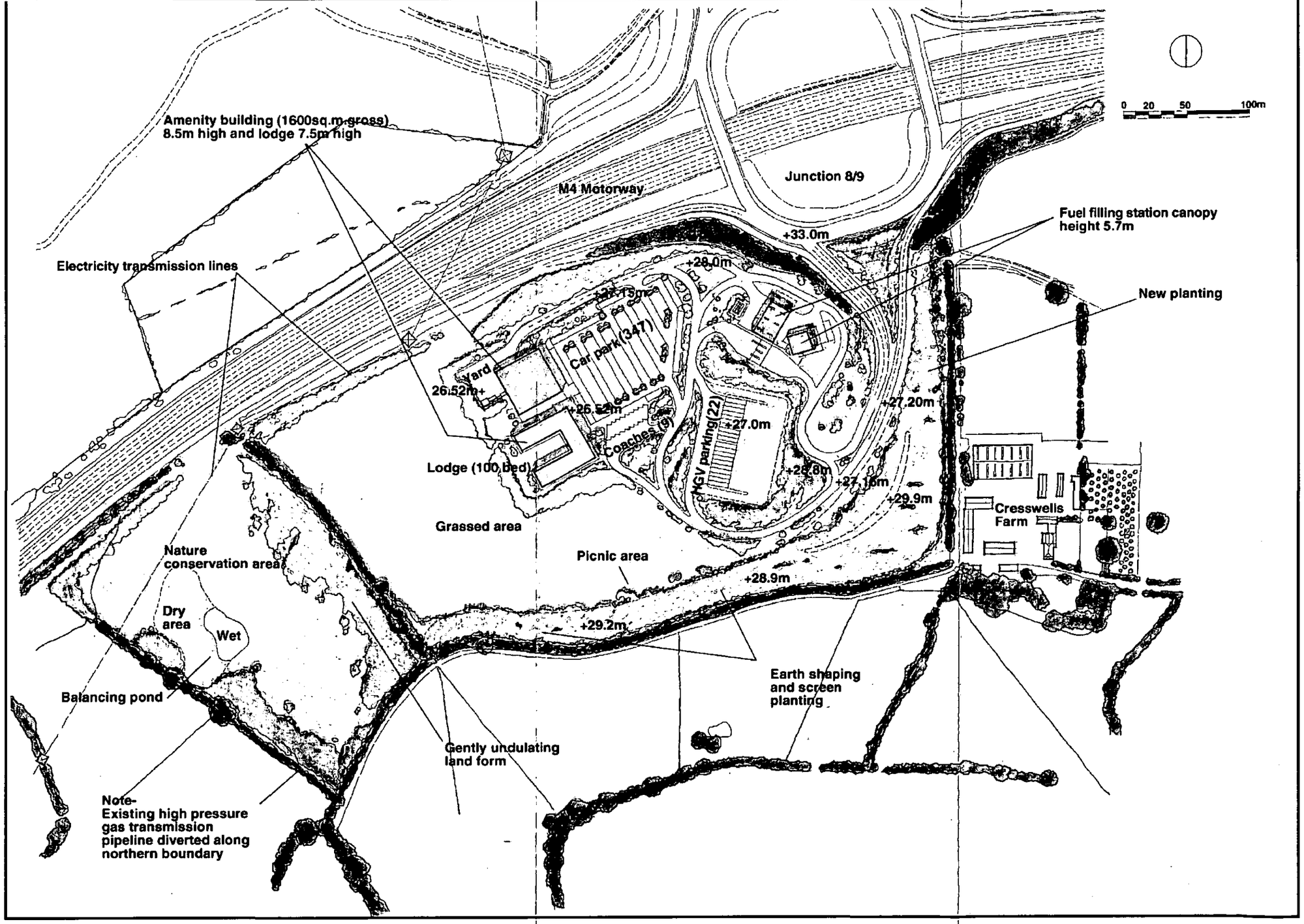

Figure 2: Illustrative Layout

01/36785

Proposed Westbound Motorway Service Area

Juction 8/9 M4
Maidenhead
Berkshire

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Supporting Planning Statement and MSA Need Statement

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Proposed Westbound Motorway Service Area
Junction 8/9 M4 Maidenhead

Supporting Planning Statement and
Statement of Need

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Proposed Westbound Motorway Service Area
Junction 8/9 of the M4 Motorway
Maidenhead

Planning Statement

Introduction

This planning application is for a westbound Motorway Service Area (MSA) on land south west of Junction 8/9 of the M4, near Maidenhead. As part of an assessment of the suitability of the site and to conform with Government legislation, an Environmental Statement has been prepared to accompany the current application.

The proposed MSA is to serve westbound traffic on the M4, as an off-line facility accessed from the motorway via a dedicated slip road constructed alongside the existing off-slip from the M4 at the Junction 8/9 interchange.

The application site is currently in use for turf production and has a total area of 13 hectares. The site is generally flat and at the same level as the main carriageway of the M4, with the motorway junction being elevated some 4-5 metres above the site. The extent of the site is defined by existing field boundaries marked by mostly mature hedges with some trees. These will be retained and further enhanced by new shrub and tree planting to the perimeter of the site. The overall design of the proposal is shown in the illustrative layout at the back of this report.

The main elements of the scheme are as follows:

- Amenity Building of some 1600m^2 containing a self-service foodhall, waitress and fast food restaurants, retail shop, amusement area, public telephones and toilets/showers;
- Lodge with 100 bedrooms;
- Fuel Filling Station;
- Picnic and play areas; and
- Car, HGV, caravan and coach parking for approximately 391 vehicles.

The Choice of the Application Site

A number of factors influence the choice and availability of a suitable site for accommodating a new MSA facility. There are several reasons for the selection of this site, arising mainly from the existing spacing of MSAs on the M4 and M25, and from Government MSA guidance. An understanding of these is important to both the planning application and the Environmental Statement. The main factors include:

- Spacing from existing MSAs, which should generally be about 30 miles (48km), though spacing of 15 miles (24km) is acceptable in certain circumstances;
- Spacing from motorway junctions - the Highways Agency will not normally approve access roads for an MSA within 2 km of an existing motorway junction;
- There is a general presumption against inappropriate development in the Green Belt (PPG2). Government guidance in Annex A of PPG13 states that MSA development should comply with PPG2, except in very special circumstances where a lack of signed MSAs could be a material consideration which could justify an exception;
- The lack of satisfactory MSA spacing on the M4/M25 section of the motorway network;
- Recent planning refusals and High Court decisions on MSA development along the M25;
- A site that in spacing terms is very well located to meet the need for MSA facilities;
- A site with the least environmental impact and least visual intrusion in the countryside.

Analysis of these factors shows that the application site at Junction 8/9 is the most appropriate location for a new MSA on this stretch of the M4 and that a facility here will also assist in meeting the shortfall of MSAs for combined motorway journeys on the M4 and M25. It is particularly well suited to meeting the needs of westbound traffic, which may not have passed an MSA for 60 miles (96km).

Planning Considerations

The application site is located within the Green Belt where there is a general presumption against inappropriate development. An assessment of alternative sites has determined that any new MSA development along this stretch of the M4 will have to be located in the Green Belt. As stated in the Windsor and Maidenhead Local Plan Policy GB11, any proposal for development needs to demonstrate that there are very special circumstances to warrant an approval. One such circumstance is the need for an essential service which cannot be accommodated on a suitable site outside the Green Belt.

Planning Policy Guidance Note13 (Annex A, paragraph 13) accepts that although MSA development in Green Belt should be avoided, this is not always practical. PPG13 gives advice on the circumstances where exception can be made;

> *"One of the material considerations which could justify such an exception could be the lack of any signed MSAs. The greater the interval between the proposed site and any existing facility the more weight should be placed on the needs of motorway users."*

An assessment of alternative locations has determined that there are no other available sites along this stretch of the M4 that could satisfactorily accommodate a new MSA with less impact on the Green Belt and environmental issues. Details of the alternative sites that have been investigated are contained in Part Four (p8) of the Environmental Statement.

Environmental Issues

Analysis of the site determined that the following environmental issues needed to be assessed:

- Landscape and visual impact
- Transportation and highways
- Socio-economic
- Noise and emissions to the air
- Ecology and Nature Conservation
- Drainage and water quality
- Archaeology and Cultural Heritage
- Agriculture

Each environmental issue has been assessed to determine the effects of the scheme and identify possible mitigation measures. The conclusions are summarised below.

Landscape and Visual Impact
The visual impact assessment has determined that potential views of the site can be divided into three categories: close range, middle range and views from the M4 motorway and Junction 8/9. In each category it has been found that only very limited views of the site are available. As the woodland planting both within the MSA site and elsewhere in the area of the application site matures, the development will be adequately screened from view.

The study of landscape character found that while the landscape is open and undeveloped in character, it is significantly influenced by agricultural activity and its proximity to the motorway. As an activity closely associated with, and located physically near to the motorway, the proposals will have a limited effect on the existing character of the area. The effect of the development will be greatest when perceived from the motorway that it serves.

The conclusion reached, is that with sensitive site planning and mitigation measures as proposed, the development can be successfully accommodated on this site with only very limited visual effect, even when first constructed.

Transportation and Highways
From the assessment of traffic and highways considerations, it is concluded that the provision of a new westbound MSA at Junction 8/9 of the M4 will comply with Government Guidance on the provision of MSAs. The Highways Agency has previously confirmed that the site is adequately spaced from all existing MSAs and will be given MSA signing if planning consent is obtained. The proposals will have no adverse effect on the existing highway network or the potential of Highways Agency proposals for junction improvements. Indeed, as traffic flows build, the off-site remedial measures will provide some relief to the operational capacity of the junction during peak hours and extend its design life. A major beneficial effect of the westbound MSA is the highway safety advantages of locating an MSA on this stretch of the M4 to provide rest, refreshment and refuelling facilities for part of the motorway network where such facilities are lacking.

Socio-economic
It is estimated that the construction phase, although short-lived, will generate in the range of 75-100 full-time equivalent jobs in the contracting and fitting-out sector. There may also be a small scale multiplier effect with supplies and equipment being obtained locally. When in operation the Service Area will sustain the equivalent of between 100-130 full-time jobs as well as employment that will be generated for suppliers and maintenance contractors.

The dedicated slip roads will extend the time over which Junction 8/9 will, in conjunction with the Highways Agency's proposals, accommodate increasing levels of traffic. The funding of this work by the applicants will therefore represent a cost saving in terms of public expenditure and reduced delays for the travelling public.

A significant socio-economic benefit arises from the fact that the MSA will provide an opportunity for drivers to stop at facilities in a region of the motorway network where (measured against Government guidance) there is a demonstrable need for additional MSA facilities. Provision of facilities for rest and refreshment is likely to reduce the risk of accidents on the motorway and road network, and the associated financial and human costs. There are no identified adverse socio-economic effects.

Noise and Emissions to Air
Existing noise from the motorway will have a significant effect in masking any noise emanating from the site during the construction period. There is only one potential recipient of noise from the MSA. The conclusion of the noise impact assessment was that the increased noise levels at Cresswells Farm created by an operational MSA would not be perceptible. With the traffic noise from the M4 and Junction 8/9 dominating the local noise environment, the inhabitants of the Farm would not perceive any additional noise. The same applies to users of the footpaths near to the site.

The proposed MSA development will have no adverse effect on the level of emissions from vehicle exhausts within the M4 motorway corridor. The effects of dust generated on the site during the period of construction will be minimised by water spraying.

Ecology and Nature Conservation
The scheme presents a number of opportunities to enhance the nature conservation value of the site and adjoining land. The new embankment for the ramped access to the site will provide a replacement and extended habitat area for the vegetation displaced from the existing motorway junction embankment. The proposed tree planting on the site will mainly be of native species, combined with areas of more open grassland, sown with a mixture of native grasses and wildflowers. The surface water balancing lake provided for attenuation of the excess run-off will create an area of wet habitat within a nature conservation area created in the field to the west of the site. These measures coupled with a management plan for nature conservation will achieve positive benefits for wildlife by extending the areas of habitat and increasing habitat diversity.

Drainage and Water Quality
A balancing lake will be constructed to receive surface water run-off from the site and protect nearby water courses from pollution and flooding. All of the hard surfaced areas will discharge via storm by-pass interceptors to trap oil and other pollutants, providing additional protection for water quality. Sewage will be piped directly to the Maidenhead Sewage Treatment Works at Bray Wick. Measures will be employed to prevent leakage from fuel stores and pipes at the fuel filling station and to safeguard the quality of the ground water. Subject to these measures, any potential adverse effects on the adjoining watercourses will be removed or reduced and the risk of leakage into ground water will be minimised.

Archaeology and Cultural Heritage
The archaeology assessment indicates that the site is largely free of any archaeological interest. The site contains only one SMR entry and the current evidence suggests that this is not of major significance. Within relatively short distances of the site there is evidence for Romano-British and Medieval settlement as well as prehistoric deposits.

A specification for monitoring archaeology of excavations during construction was agreed at the time of the previous planning application. The same specification is considered appropriate for this application.

The site adjoins the Holyport Conservation Area. Cresswells Farm just to the east of the site includes a Grade II Listed Building. Extensive studies at the time of a previous Planning Inquiry showed that with the siting design of the MSA development as shown, with sensitive tree planting and gentle ground contouring, there will be no adverse effects on the setting and character of the Conservation Area or the Listed Building.

Agriculture
Of the total planning application area, some 13 ha, approximately 3.5 ha will be covered by hard surfacing within the MSA and therefore permanently lost to agriculture. The proposals do not represent a strategic land loss likely to be of concern to MAFF. The agricultural grading is not considered to be within the "best and most versatile" category.

Conclusions

An appraisal of alternative sites has shown that the application site represents the best location for a westbound MSA serving traffic on this section of the M4/M25 motorway network. The MSA would provide motorists with additional facilities to meet a demonstrable need, thereby improving highway safety.

The development of the site would be in accordance with the guidance of PPG 13 which states that where there is an identified need for an MSA and particularly where there are no alternative sites available for development outside the Green Belt, the presumption against development in the Green Belt can be set aside. The application site is the only appropriate and suitably located site to meet the need for a new MSA along this section of the M4 corridor serving joint M4/M25 need.

The environmental assessment has shown that the proposed MSA can be developed on this site with no significant adverse impact on the identified environmental issues. Impacts that have been identified, have either been removed or reduced by the careful design of the scheme, or safeguarded by mitigating measures. The screening given by existing hedges and the proposed planting of trees and shrubs will allow satisfactory assimilation of the development into the surrounding landscape.

The scheme also has a number of significant advantages including;

- Meeting Government guidance by providing facilities for motorists using sections of nationally important strategic traffic routes where the provision of such facilities currently falls below the advisory spacing that is necessary to achieve highway safety;
- By enabling motorists to find facilities and accommodation en-route, thereby avoiding trips off the motorway, saving time, fuel, pollution and congestion, the scheme is highly sustainable;
- Providing benefits that will improve highway safety by reducing the risk of fatigue-related accidents;
- Creating between 100 and 130 full time equivalent jobs; and
- Providing an enhancement of the wildlife value to the peripheral areas of the site and adjoining land.

The overall conclusion is that an MSA can be accommodated on the site without significant adverse environmental impact, whilst generating a number of important benefits for motorway users and the wider population.

The Need for a New Service Area

Government Guidance

In 1992 the Government changed the legislation relating to the provision of Motorway Service Areas. This enabled MSAs to be initiated by the private sector, whereas previously they could only be promoted by the Department of Transport.

Current Government policy broadly seeks provision of an MSA approximately every 30 miles (48 km) in order to provide drivers with adequate opportunities to stop and rest. More frequent spacing down to 15 miles (24km) is acceptable in certain circumstances, where a clear and compelling safety case has been established.

The reasons for the Government requiring adequate provision of MSAs are;

- To ensure motorists do not have to travel excessive distances between facilities;
- To avoid motorway users having to leave the motorway network in search of rest, refreshments, toilets, fuel and overnight accommodation;
- To improve motorway safety for all users and assist HGV drivers to comply with regulations; and
- To provide increased choice and competition.

Factors Determining Need;

- The distance between existing and proposed MSAs;
- The travel times between existing and proposed MSAs;
- The volume of traffic on the motorway;
- The characteristics of motorway use, including length of journey; and
- Safety considerations.

In the case of the M4/M25 motorway network in the region of Maidenhead and west of London, all of the above factors combine to make it apparent that there is a compelling need for a new MSA on this section of the M4. Compared with the minimum advisory spacing of 30 miles (48 km), this section of the westbound M4/M25 motorway network is currently under-provided.

A driver travelling west on the M4, having also used the south west sector of the M25 for part of the journey may cover a distance of over 60 miles (96km) without the opportunity to stop at an MSA, twice the advisory distance; or having used the north west sector of the M25, a distance of 52 miles (83 km). The shortfall in provision is compounded by the fact that this section of the M4 experiences very high levels of traffic. Several planning applications for new MSAs on the M25 have recently been refused or overturned by High Court decisions.

There have been five proposals for additional Service Areas on the M25, three to the north of the M4 intersection and two to the south. The Secretary of State, considering Inspectors' Reports, has previously examined whether new MSAs could be provided at these locations on the western sector of the M25. He attached considerable weight to the need for more facilities, to the harm that might be caused to the Green Belt, and also to the very congested traffic flow on the western sector of the M25. The additional motorway movements which would result from vehicles accessing new MSA slip roads was a factor that weighed against provision of services in the north-western sector where there are high volumes of traffic in an area with a number of junctions in close proximity.

The Secretary of State concluded that only one proposal was acceptable in planning terms, although this site would also be in conflict with Green Belt policy. This was at New Barn Farm, Cobham, located in the south west sector of the M25. He also concluded that the benefit to motorists of a second MSA in the sector north of the M4 was outweighed by the harm to the Green Belt. However, the Secretary of State's approval of planning permission for a new MSA at Cobham has subsequently been overturned by the High Court (ref. CO/4726/1999).

Three MSA proposals on the M4 were also considered by the Secretary of State, at Great Hazes and Great Wood some distance east of Reading and a proposal located at Junction 8/9, Maidenhead. The Secretary of State dismissed all of these proposals, expressing the view that the need for a new MSA on the M4 did not outweigh Green Belt considerations, but did acknowledge that a new MSA on the M4 would assist in meeting the need of combined M25/M25 travel.

Inspectors' Decisions on the M4 sites acknowledged that in spacing terms, the J8/9 location was the best placed. Sites west of J8/9 are all too close to Reading MSA, being less that 15 miles (24km) away. No other MSA applications between Clacket Lane/South Mimms MSAs on the M25 and Reading have been approved. The substantial need for facilities remains unmet.

Highway Safety

Research undertaken for the DETR by the Sleep Research Institute at Loughborough University has shown that motorists who are unable to stop when they are too tired or stressed to continue their journey safely without taking a break, are posing a serious risk to highway safety. Motorway accidents tend to be serious due to the speed of motorway traffic. Motorists require MSA facilities during journeys to enable them to relieve tiredness, hunger, thirst and physical discomfort, all of which can impair driving competence.

A significant proportion of accidents on motorways are related to drivers' tiredness. Studies of actual personal injury accidents indicate that 20% or more of personal injury accidents have sleep or fatigue as a contributory factor. In relation to sleep related factors, the records rely to an extent on the driver admitting to a lapse of concentration. Drivers are generally reluctant to admit to fatigue as a contributing cause of an accident and police officers tend not to report fatigue as a factor unless this conclusion is inescapable. Research indicates that the recorded accident statistics understate the true incidence of fatigue related accidents. The conclusion of the Loughborough research is that typically, the actual rate is 4-5 times greater than recorded.

Research has confirmed that drivers are aware they are falling asleep prior to doing so, enabling them to heed advice to cease driving as soon as possible and take a rest. Provision of adequately spaced facilities will ensure that motorists have the opportunity to take regular breaks when necessary without diverting from the motorway. Many fatigue related accidents occur at night and in the early hours of the morning, demonstrating the road safety benefit of 24 hour opening of facilities and parking. There is a legal requirement for HGV drivers to rest at set intervals. Lack of facilities could contribute to a breach of safety regulations.

Enforced stops on the motorway due to lack of fuel present a hazard to those involved and other road users. During those periods of the day when free flow of traffic is not guaranteed it becomes more difficult to predict the driving time to the next MSA. For busy motorway corridors, provision of facilities at adequate intervals ensures drivers have the confidence of finding facilities without travelling for too long a period of time.

Given that there is a need for facilities in terms of spacing from existing MSAs and traffic flow, the proposed scheme will fulfil the requirements of a large number of motorists when the need arises rather than them having to continue driving. This is likely to assist in reducing the accident rate on the motorway network, contributing to lower levels of injury and fatality, and also less delays for travellers not directly involved. Motorway accidents often involve large numbers of vehicles and can result in deaths or serious injury, they are costly, both financially and in personal terms. Provision of basic facilities 24 hours a day, 365 days a year to meet the needs of motorists will have considerable road safety benefits.

Traffic Volume and Travelling Time

The M4 in the area of Maidenhead is one of the busiest sections of motorway in the United Kingdom with an average daily two-way flow in 1998 of 186,100 vehicles on the M4, A404(M) and A308(M). This includes a high number of long distance strategic trips.

The Government's policy on MSA spacing intends that travel time is considered as well as the physical distance of around 30 miles (48km). The relevant spacing is intended to equate to a travelling time of half an hour, which has been converted into distance on the basis of an average motorway speed of 60mph.

This becomes a less reliable method of conversion in areas which suffer from traffic congestion and where speed controls have been introduced. The M25/M4 motorway network is prone to congestion and delay, not always limited to traditional peak travel periods. As a result, travel times between MSAs spaced at 30 miles (48km) are regularly longer than thirty minutes.

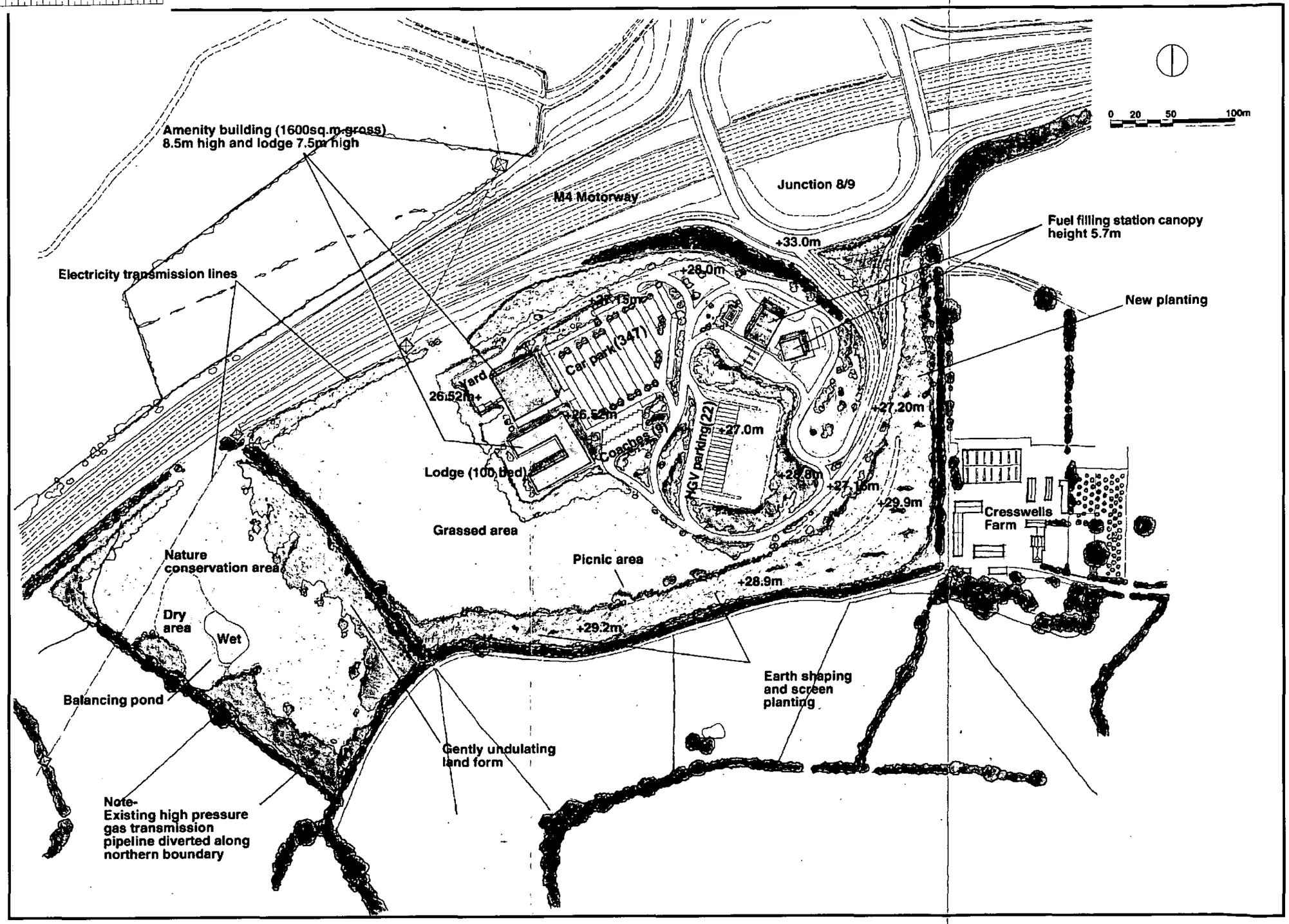
The introduction of variable speed limits for safety and capacity reasons on the M25 between J10 and J15 confirms the fact that the upper speed limit cannot always be achieved due to high traffic volumes experienced on the network. During the evening peak period the M4 regularly experiences stop-start conditions, particularly westbound from London to J8/9 at Maidenhead. This exacerbates the need for additional MSA facilities.

Conclusion

The conclusion is that there is a need for additional MSA facilities to serve a combined M4/M25 need. This need arises from:

- Excessive distances between existing MSAs - twice the advisory distance
- The lack of acceptable sites for new MSAs, with recent decisions overturned by Appeal and High Court decisions
- The conclusions of research into fatigue related accidents show a greater incidence of such events than previously acknowledged
- The cost of such accidents in financial and personal terms is very high
- Additional MSAs can assist in reducing such accidents
- Traffic volumes on this section of the motorway network are very high
- Traffic congestion means that drivers take longer to travel the distance between MSAs then the advisory 30 minutes.

The combination of these factors amounts to an overriding need for an additional MSA on this stretch of the motorway network. The site at Junction 8/9 of the M4 at Maidenhead provides a suitable opportunity to meet the needs of westbound traffic, a point recognised by Inspectors dealing with previous MSA appeals on the M4, and recognised by the Secretary of State as a material consideration that could weigh in favour of additional provision on the M4 to serve motorists travelling to and from the M25.



Illustrative Layout

01/36785

Proposed Westbound Motorway Service Area

Junction 8/9 M4
Maidenhead
Berkshire

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APPENDIX 1
Transportation and Highways

BOULEVARD LAND LIMITED
Land and Property Development
Granada

FPDSavills
INTERNATIONAL PROPERTY CONSULTANTS

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1. PREFACE

1 PREFACE

1.1 Introduction

1.1.1 An Application for outline planning permission to develop a Motorway Service Area (MSA) at Junction 8/9 on the M4 motorway, was previously submitted by Boulevard Land Ltd in 1994. The application was 'called in' by the Secretary of State for the Environment and was later refused following a public inquiry. The previous application centred on a standalone facility that catered for M4, A404(M) and A308(M) traffic.

1.1.2 This application, to be operated by Compass Roadside, offers a revision to the previous application and aims to provide key Motorway Services exclusively for westbound travellers on the M4.

1.1.3 URS Thorburn Colquhoun has been appointed to advise on the engineering and transportation issues that are associated with this application. This report describes the work undertaken for the traffic impact appraisal of this proposal.

1.2 Layout of Report

1.2.1 Chapter 2 describes the policy context, Chapters 3 and 4 the characteristics of the development, and highway network. Chapter 5 discusses the Government's existing commitment to provide junction improvements and outlines the assessment framework. Chapter 6 provides an examination of base flows and future traffic growth. Chapter 7 details the traffic generated by the scheme, and its distribution on the local highway network. Chapter 8 considers the methodology to determine the traffic impact of the proposed MSA with Chapter 9 outlining the various network scenarios and TRANSYT results. Chapter 10 describes the extent of the Off-Site remedial measures. Finally, Chapter 11 presents the conclusions.

2. POLICY CONTEXT

2 POLICY CONTEXT

2.1 Central Government

2.1.1 Government guidance, as set out in Annex A to Planning Policy Guidance Note (PPG) 13 – *Transport,* includes specific direction on motorway and roadside service areas. It recognises that the government is committed to improving the service offered to motorway users through an increase in availability and choice of MSA's[1]. In addition, the Note suggests that approval should not be given for an MSA within the Green Belt except in circumstances where the needs of motorway users can justify an exception, bearing in mind the proximity of existing MSA's. The guidance recognises the sensitive nature of Green Belts and advises that they should be avoided where possible[2]. This issue is dealt with in a separate submission prepared by FPDsavills[3].

2.1.2 The site has the potential to serve traffic using a combination of routes involving journeys on other Motorways such as the M25, M40 via the A404(M) and A308(M). The existing spacing of MSA's for most of these other routes is relatively poor, in an area of high traffic concentration and considerable peak hour congestion. The spacing between this site and adjacent sites therefore fits comfortably with the Government's aim of providing more services while not reducing spacing to a frequency that will compromise safety and traffic management.

2.1.3 The distance between the site at Maidenhead and existing MSA's is shown in Figure 2-1

[1] PPG-13 1994 Paragraph 5

[2] PPG13 1994 Paragraph 12 and 13

[3] FPDsavills Environmental Statement

From	To						
	Reading M4	Heston M4	Wheatley (M40)	South Mimms (M25)	Toddington (M1)	Clacket Lane (M25)	Pease Pottage (M23)
Reading M4		**31**	**42**	**52**	**62**	**64**	**69**
Heston M4	**31**		**38**	31	41	**43**	48
Wheatley (M40)	**42**	**38**		49	59	71	76
South Mimms (M25)	**52**	31	49		26	64	69
Toddington (M1)	**62**	41	59	26		73	79
Clacket Lane (M25)	**64**	43	71	64	73		21
Pease Pottage (M23)	**69**	48	76	69	79	21	

Figure 2-1 Shortest Route Distances (Miles) Between MSA's Adjacent to Proposed Site (Routing through Junction 8/9 in bold)

(Note: Mileages Rounded to Nearest Whole Number)

	To							
From	Reading M4	Maidenhead (M4 WB Only)	Heston M4	Wheatley (M40)	South Mimms (M25)	Toddington (M1)	Clacket Lane (M25)	Pease Pottage (M23)
Reading (M4)		16						
Maidenhead (M4 WB Only)	16		15	27	36	46	48	53
Heston (M4)		15		38	31	41	43	48
Wheatley (M40)		27	38		49	59	71	76
South Mimms (M25)		36	31	49		26	64	69
Toddington (M1)		46	41	59	26		73	79
Clacket Lane (M25)		48	43	71	64	73		21
Pease Pottage (M23)		53	48	76	69	79	21	

Figure 2-2 Revised Spacing of MSA's with Additional MSA at Maidenhead

2.1.4 In terms of the Green Belt, appropriate guidance is given in PPG 2 - *Green Belts*[4]. There is a general presumption against the construction of new buildings or for a change of use of existing buildings within designated Green Belt for purposes other than:

- agriculture and forestry;
- essential outdoor sport;
- recreation and cemeteries, and;
- the limited extension, alteration or replacement of existing dwellings;
- in-filling of existing villages;
- affordable housing;
- in-filling or redevelopment of major existing developed sites

[4] PPG 2 1995 Paragraph 3.4

2.1.5 Other guidance is contained in circulars issued by the Department of the Environment, Transport and the Regions (DETR), notably the DETR's Roads Circular 1/94. National guidance therefore, suggests that the need for an MSA can be a very special circumstance where the presumption against development in the Green Belt can be set aside.

2.1.6 In their *Ten Year Transport Plan,* Transport 2010, The Government has highlighted its commitment to maximise the efficient use of the Trunk Road network and includes provision for significant *Multi-Modal Studies.* These studies will be aimed at investigating the most serious problems on the trunk road network that have not been addressed by the Government's present Targeted Programme of Improvements (See paragraph 5.1.2). The studies are examining the role of each transport mode to determine what investment is needed to tackle the transport issues. The studies will also look at a range of demand management measures where appropriate, with Transport 2010 providing the funding to implement the outcomes.

2.1.7 In the context of the Motorway Network surrounding this MSA, and the M4 in particular, the proposal for the *London to Reading Multi-Modal Study* is significant, in that it recognises the need to secure solutions to congestion issues along the M4 corridor.

2.1.8 Options forming part of the study will include:

- Development of orbital services around London;
- Targeted motorway widening and other improvements, including the M25 and M4;
- Signalling and traffic management measures aimed at making better use of existing trunk road infrastructure;

2.2 The provision of an MSA

2.2.1 The consideration of the interval between existing and proposed facilities, the needs of motorway users, the local impacts on the Green Belt and the environmental impact assessment are contained in a separate Environmental Statement prepared by FPDsavills. The developers, Boulevard Land Limited are prepared to undertake archaeological investigations.

3. PROPOSED MOTORWAY SERVICE AREA

3 PROPOSED MOTORWAY SERVICE AREA

3.1 Site Location

3.1.1 Figure 3-1 shows the site location and Figure 3-2 its location in terms of the strategic road network. The proposed MSA is located on land within agricultural use to the south of Junction 8/9 of the M4 at Maidenhead. The site is bounded by the motorway and the elevated Junction 8/9 to the north. Existing mature hedges and trees define the remaining southern, western and eastern boundaries.

3.2 Description of Facilities

3.2.1 The proposal envisages a development to include a 1,*600* square metre amenity building (plus entrance lobby and lodge entrance), a 100-bed lodge, fuel facilities and parking for 347 cars, 22 Heavy Goods Vehicles and 9 Coaches.

3.2.2 The outline design proposes a circulatory layout that provides for the separation of vehicle types. The facility is to be surrounded by a landscape buffer zone made up of new and existing features.

3.3 Access Arrangements

3.3.1 Access to the MSA would be from the M4 Junction 8/9 roundabout via a new spur road positioned on the southern half of the existing elevated roundabout. Access to the spur would be restricted to:

- M4 (Westbound) vehicles using a dedicated lane diverging into the site from the westbound off-slip

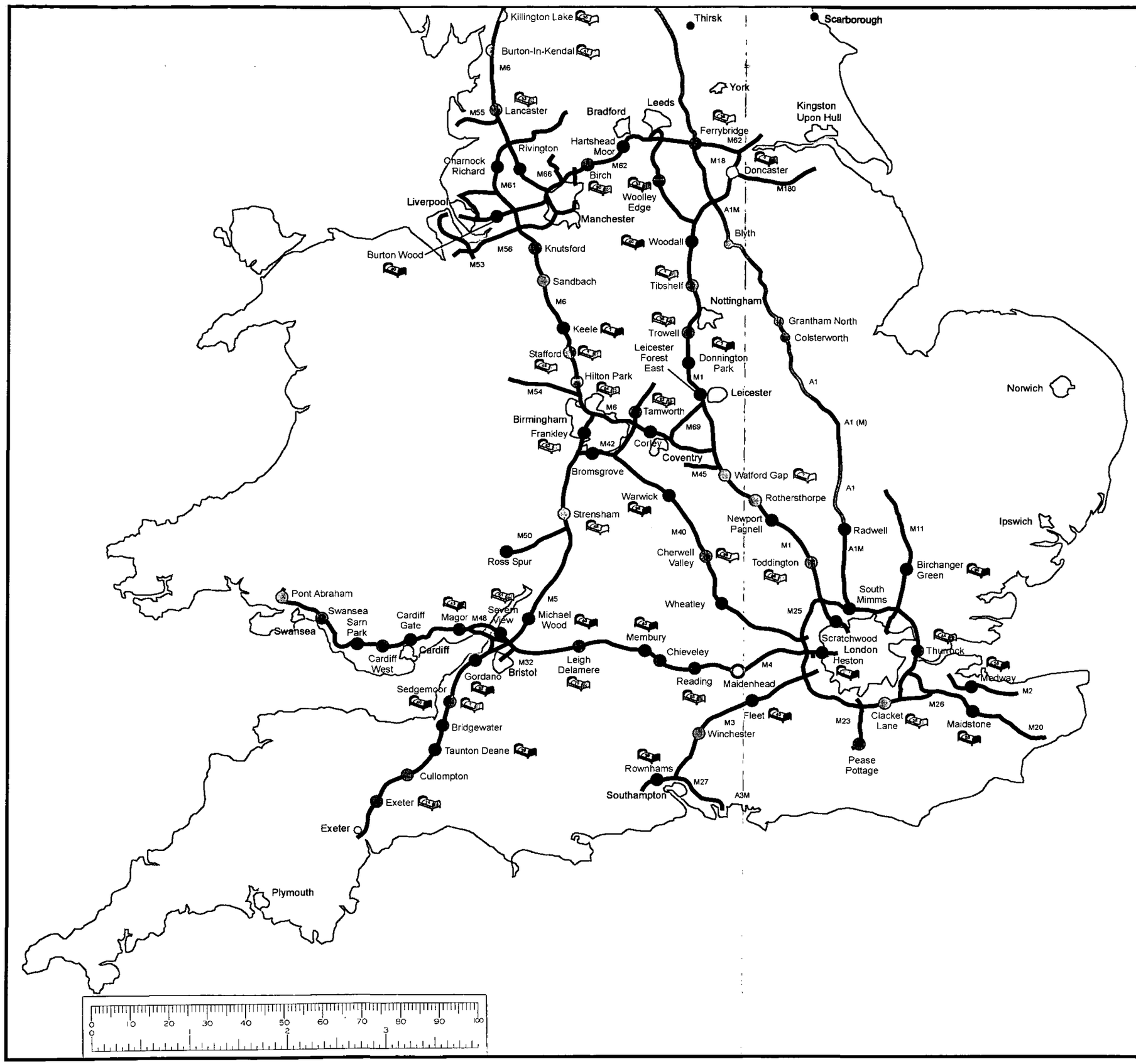
3.3.2 Egress from the MSA will be via the new spur road that will facilitate onward travel via the M4 (Westbound) A404(M) and A308(M).

3.3.3 Traffic re-joining the M4 (Westbound) would merge with the Westbound on-slip using a dedicated lane, whilst traffic for all other destinations would join the roundabout under the control of a give way. There will be no change in traffic patterns lying to the North of the M4 carriageway. Details are shown in Drawing No 339945/P/108/SK6 in Appendix A.

3.3.4 The remaining traffic conflicts at the junction would remain under the control of the existing traffic signals.



Figure 3-1 Site Location



URS
Thorburn Colquhoun

COMPASS GROUP

Key to map

- Compass Motorway Service Areas
- Welcome Break Service Areas
- Road Chef Service Areas
- Westmorland / Cairn Lodge
- First Motorway Services
- Granada Trunk Road Service Area
- Motorway
- Trunk Road
- Travel Lodge (Indicating Number of Rooms)

Location of Existing Motorway Service Areas
Figure 3.2



4. EXISTING SITUATION

4 EXISTING SITUATION

4.1 Highway Network

4.1.1 The M4 Junction 8/9 roundabout and all roads leading to it, the A404(M) and the A308(M), are the responsibility of the Highways Agency acting on behalf of the Department of Transport, Environment and the Regions (DETR). All the roads are of motorway standard, with the M4 currently three lanes dual carriageway and the A404(M) and A308(M) two lanes. The M4 passes the site in an east to west direction, with the A404(M) located to the north-west and the A308(M) to the north-east.

4.1.2 The high level of traffic passing through the junction has resulted in all arms of the roundabout being signalised. There are two lanes at the stop line on each of the entry arms and three lanes at each stop line on the circulating carriageway. There are no directional markings.

4.2 Existing Traffic Flow

4.2.1 Traffic flows have been based on a full classified turning movement survey undertaken at Junction 8/9 on Thursday 3 February 2000. The survey was conducted between 07:00 and 10:00 and between 16:00 and 19:00 hours. The data was collected either manually or by a series of low mast video cameras. Observations were recorded at fifteen minute intervals, with vehicles classified by Light Goods Vehicles (including cars), Heavy Goods Vehicles and buses. Traffic flows for the survey day in PCU's are shown in Figure 4-1 and Figure 4-2 and include an adjustment to include observed queuing traffic discussed below in paragraph 4.2.4 below.

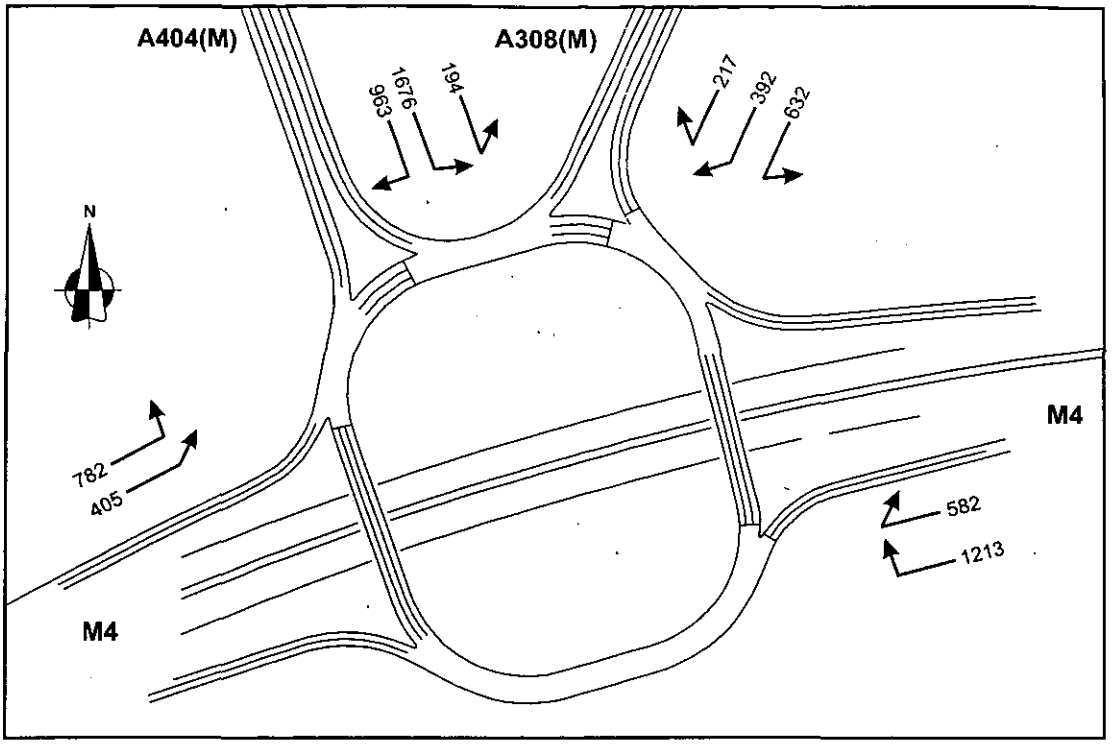


Figure 4-1 **Existing AM Peak Hour Demand Flows including queuing taffic (PCU's)**

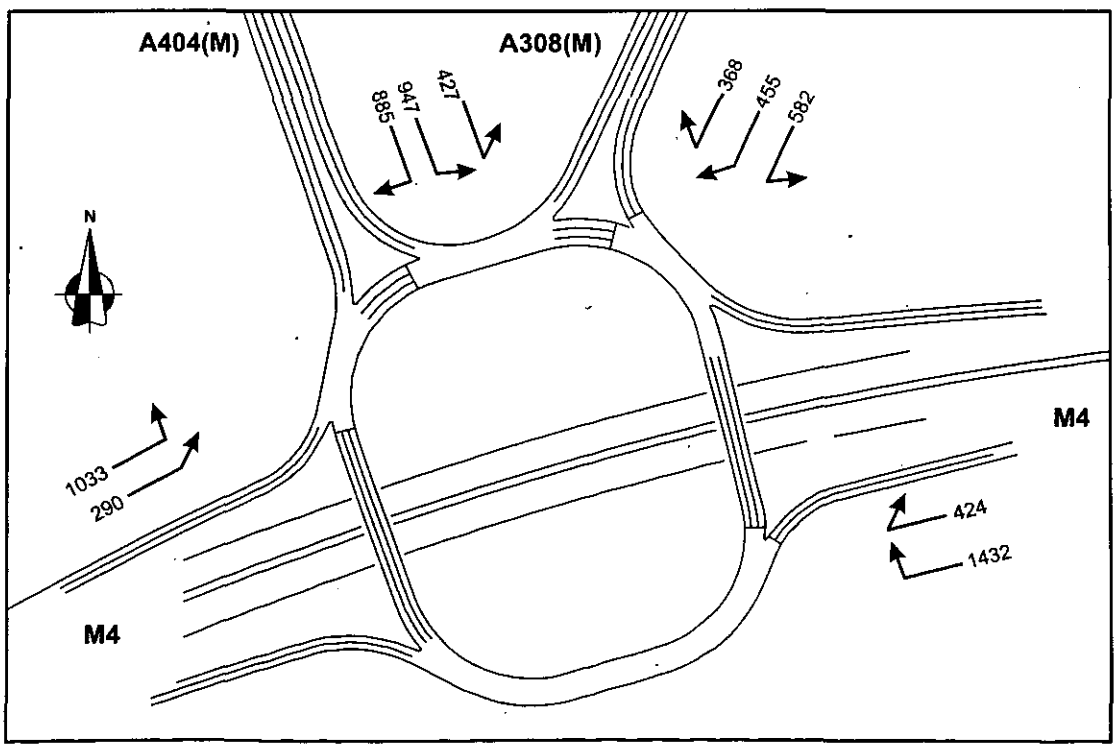


Figure 4-2 **Existing PM Peak Demand Hour Flows including queuing traffic (PCU's)**

4.2.2 During the period of the survey, the length of queue was recorded for each approach arm, at 5 minute intervals:

- M4 Westbound off-slip
- M4 eastbound off-slip
- A404(M)
- A308(M)

4.2.3 Between 07:35 and approximately 09:00, the inbound queuing traffic from the A404(M) was recorded in excess of the field of view. This distance has been measured as some 1650 metres. Recorded queue lengths (in metres), are shown in Figure 4-3 and Figure 4-4.

	M4 Eastbound Off-Slip (Slip Length 300m)		**M4 Westbound Off-Slip (Slip Length 300m)**		**A308 (M)**		**A404 (M)**	
	Queue Length (M)		Queue Length (M)		Queue Length (M)		Queue Length (M)	
Time	Lane 1 N/S	Lane 2 O/S	Lane 1 N/S	Lane 2 O/S	Lane 1 N/S	Lane 2 O/S	Lane 1 N/S	Lane 2 O/S
09:00	75	75	25	125	80	100	1250	1250
PCU's	12.50	12.50	4.17	20.83	13.33	16.67	208.33	208.33

Figure 4-3 End of AM Peak Recorded Queue Length (Metres)

	M4 Eastbound Off-Slip (Slip Length 300m)		**M4 Westbound Off-Slip (Slip Length 300m)**		**A308 (M)**		**A404 (M)**	
	Queue Length (M)		Queue Length (M)		Queue Length (M)		Queue Length (M)	
Time	Lane 1 N/S	Lane 2 O/S	Lane 1 N/S	Lane 2 O/S	Lane 1 N/S	Lane 2 O/S	Lane 1 N/S	Lane 2 O/S
18:30	100	75	100	100	40	35	75	50
PCU's	16.67	12.50	16.67	16.67	6.67	5.83	12.50	8.33

Figure 4-4 End of PM Recorded Queue Length (Metres)

4.2.4 The results of the queue length surveys were used to refine the input flows used by the TRANSYT model in order to create a reliable base model. In essence, the number of vehicles that were recorded in the queue at the end of the modelled period was added to the entry flows for each approach link.

4.2.5 The classified turning count information has been supplemented by automatic traffic data for the M4 Motorway provided by Babtie Group as part of their Southern Area Monitoring duties for the Highways Agency. The movements counted, together with the periods for which data has been obtained, are as follows:

Description	Direction	Site No.	Date
M4 Main C/W before On-slip	Eastbound	4015	W/C 31/01/00 – W/C 28/02/00
M4 Main C/W before On-Slip	Westbound	4016	W/C 7/02/00 – W/C 28/02/00
M4 East of Junction 8/9 Reading	Eastbound	4017	W/C 31/01/00 – W/C 28/02/00
M4 East of Junction 8/9 Reading	Westbound	4018	W/C 28/02/00 – W/C 27/03/00
A404(M) North of M4 J8/9	Northbound	4083	W/C 02/02/00 – W/C 06/07/00
M4 Junction 8/9	Eastbound	4087 (4015+4995)	W/C 31/01/00 – W/C 28/02/00
M4 Junction 7 - 8/9	Westbound	4088 (4016+4996)	W/C 07/02/00 – W/C 28/02/00
M4 J8/9 Eastbound On-Slip	Eastbound	4995	W/C 31/01/00 – W/C 28/02/00
M4 J8/9 Westbound Off-Slip	Westbound	4996	W/C 07/02/00 – W/C 28/02/00

4.2.6 Traffic flows for the junction is shown in Figure 4-5. The traffic volumes have been presented as both 24 and 16-hour flows.

4.2.7 The 24-hour two-way flow on the M4 which passes through the junction whilst remaining on the motorway is 121,800 vehicles and the flow on the M4 between Junctions 8/9 and 7 is 130,700 vehicles.

Location	24 Hr AADT (2-Way)	16 Hr AADT (2-Way)	24 Hr AAWT (2-Way)	AM Peak Flow (2-Way veh/hr) 08:00 to 09:00	PM Peak Flow (2-Way veh/hr) 17:00 – 18:00
M4 Passing MSA[1]	121,800	112,400	130,700	8,950	10,400
M4 (J7-J8/9)[1]	130,700	120,500	140,000	10,450	10,950
M4 (J8/9 – J10)[1]	113,600	105,000	122,100	8,300	9,700
A404(M)[2]	42,000	38,900	44,000	4,450	4,000
A308(M)[3]	22,300	20,600	23,400	2,050	2,150

Notes: All data equivalent to 1998 flows
1 AADT, AAWT, 16 hour and peak flows derived from June 1998 data
2 All flows derived from October 1996 data
3 All flows derived from June 1996 data

Figure 4-5 24 and 16 Hour Traffic Volumes

4.2.8 Officers at Reading Borough Council (RBC) were also approached to obtain details of the current traffic signal timings and operation. The response by the Borough confirmed that the junction is under UTC control throughout the day Monday to Friday. Details of the UTC traffic signal plans, changes and timings were also supplied to allow the production of an accurate model.

4.2.9 RBC was also able to confirm that, although there are queue loops on the slip roads, they had been abandoned and are no longer in use following several instances whereby these loops created excessive delays on the roundabout.

5. SCHEDULED JUNCTION IMPROVEMENTS

5 SCHEDULED JUNCTION IMPROVEMENTS

5.1 Background

5.1.1 The need for improvement of the M4 Motorway, west of the M25 (Junction 4B), between Windsor, Slough and Maidenhead to Junction 8/9 (Maidenhead), was previously tested at Public consultation in 1993. The original proposals for widening to ease congestion were however withdrawn in 1996, although the scheme was identified as one to be reviewed as a potential smaller scale improvement.

5.1.2 The Government's *Ten Year Plan 2010* has now indicated a number of early congestion and safety improvements to be delivered by March 2002 on Trunk Roads. The improvement of the M4 Motorway, west of the M25, remains a priority. From the list of improvements, M4 Junction 4 to 4B (Westbound) has been scheduled for Junction Improvements, with the M4 Junction 8/9 programmed for Traffic Signal modifications and associated carriageway widening.

5.1.3 Taking into account the Government's commitment to provide improvements, we have sought guidance from the HA on the extent of works proposed. The Agency was unable to provide any detail of their proposals prior to preparation of this report.

5.1.4 This proposal for a Westbound only MSA has evolved from an earlier scheme discussed with the HA. By restricting the proposed access arrangements with dedicated lanes, the impact on the roundabout is minimal. As already mentioned, to the North of the two over-bridges there would be no change to traffic patterns.

5.2 Assessment Framework

5.2.1 In the absence of information from the HA the initial part of the assessment concentrates on identifying existing capacity at the junction and the scope for possible improvements under the heading of *Substantial Improvements – Scheme 1*. The design years would parallel the proposed opening year for the MSA of 2003 and a design to 2010. The design year of 2010 has been chosen to coincide with the predicted design life of improvements that could be provided by the Highways Agency as part of the proposals indicated by *The 10-Year Plan*. This part of the assessment identifies the scale of improvements that could be pursued by the Highways Agency (HA), independent of the MSA.

5.2.2 The assessment will identify potential large scale improvements for the junction that could be provided to the benefit of all road users by the HA

5.2.3 The second part of the assessment considers the *Anticipated HA Improvements 2003- Scheme 2* in expectation of a smaller Agency scheme that should relieve many of the congestion issues at the junction without totally solving them. Various scenarios are examined to determine the operation of the junction in 2003 "without improvement" and to compare this situation against the junction following this Anticipated HA Improvements in 2003, both "With" and "Without" the MSA.

5.2.4 Further details of the *Substantial HA Improvements* and the *Anticipated HA Improvements 2003* are discussed below.

5.2.5 In view of the proposals for M4 Junction 8/9, the proposals for Maidenhead MSA have been prepared to avoid detriment and without prejudice to any improvements to be gained from any necessary junction modifications that would be pursued independently by the Highway Agency.

5.3 Potential Highways Agency Proposals

5.3.1 Section 5.1 indicates that there are improvements scheduled for Junction 8/9 by March 2002 as part of *The 10 Year Plan 2010*. Although a formal scheme is not yet available from the HA, it has advised that traffic signal modifications and associated carriageway widening indicated by *The Plan*, are being progressed within the confines of the highway boundary. For comparison, an assessment has been carried out on this basis to determine the potential scale of these improvements.

5.3.2 Although an opening year of 2002 has been indicated for completion of the HA scheme, this is a full year in advance of the proposed opening year for the MSA. This assessment therefore assumes that that the Highways Agency scheme also opens in 2003 to allow a robust base for comparison.

5.3.3 In the absence of specific details on the scale of the HA scheme, this assessment has been divided into two parts:

- Substantial HA Improvements – **HA Scheme 1**
- Anticipated HA Improvements 2003 – **HA Scheme 2**

Substantial HA Improvements – HA Scheme 1

5.3.4 The first part concentrates on determining the maximum practicable at-grade improvements that could be achieved by the Agency within the confines of the highway boundary and determines the associated scheme design life.

5.3.5 The fact that the existing junction requires improvement has been recognised by the Government. The actual scale of the improvements has not been determined at this time, however this part of the assessment shows that it is possible for the HA to pursue substantial at grade improvements to the junction with capacity to 2010. Although conditions are anticipated to deteriorate after 2010, these improvements would be expected to continue to provide benefit to the travelling public beyond this date before conditions would match the high congestion levels currently experienced at the junction.

5.3.6 In view of the above it is therefore considered reasonable to employ a design year for this scenario that will coincide with the maximum anticipated design life of a substantial HA scheme.

5.3.7 The object of the Highways Agency improving the roundabout would be to provide additional capacity and hence reduce queues and delays for all road users. As part of the Substantial Improvement, it has been assumed that that this would be provided by the Agency through:

- an additional third lane on the A404(M) and M4 off-slip entries into the roundabout;
- the addition of a fourth lane on the circulatory carriageway to the north of the motorway;
- an additional lane on the A308(M) exit from the roundabout.

5.3.8 The additional fourth lane on the northern circulatory carriageway would not affect the bridges over the motorway.

5.3.9 For the Agency to maximise its improvement within the confines of the highway boundary and secure the predicted benefit until 2010, it would be necessary for them to supplement the above works with dedicated lanes that would merge the:

- M4 Eastbound off-slip with the A404(M) northbound carriageway;

- A404(M) southbound approach to the roundabout with the A308(M) northbound carriageway, and;
- A308(M) southbound approach to the roundabout with the M4 Eastbound on-slip;

5.3.10 Analysis of the merge and diverge flows for the M4 carriageway also indicates that the existing type "A" arrangement serving both merges and diverges for the on and off slip roads is below the standard for the existing traffic patterns. In fact a type 'D' layout could be justified for the westbound merges and diverges, although the provision of a type "B" layout is considered the most realistic option for the HA to provide for the foreseeable future. A similar scenario exists for the eastbound carriageway where the flows indicate that a type 'E' merge and type 'D' diverge could also be considered. Appendix B indicates the relevant mainline and merging/diverging flows for 2000 and 2003 based on automatic traffic data for 2000.

5.3.11 It is notable that the main area for improvement would need to be concentrated towards the northern side of the junction.

Anticipated HA Improvements 2003 – HA Scheme 2

5.3.12 Although we have examined a HA scheme with the greatest benefit, we recognise that the junction as a whole would also profit from a smaller scheme that is more cost effective and relieves many of the congestion issues without totally solving them. The second part of the assessment therefore tests the proposal for an MSA against a network where additional capacity is provided to improve conditions over existing conditions to the overall benefit of the travelling public. This ultimately provides a sterner test.

5.3.13 This part of the assessment therefore recognises the need to provide the most cost effective scheme and it has therefore been assumed that the anticipated HA proposals for 2003 may be condensed from those indicated by the Substantial Improvements indicated above and developed later in this report.

5.3.14 Once again the Highway Agency's objective would be to provide additional capacity although at a reduced scale. In the short term it has been assumed that this would be provided by the Agency through:

- an additional third lane on the A404(M), M4 Eastbound and Westbound off-slip entries into the roundabout;
- the addition of a fourth lane on the circulatory carriageway to the north of the motorway, and;
- an additional lane on the A308(M) exit from the roundabout.

5.3.15 It is again notable that the main area for improvement would need to be concentrated towards the northern side of the junction.

5.3.16 Once again analysis of the merge and diverge flows for the M4 carriageway indicate that the existing type "A" arrangement serving both merges and diverges for the on and off slip roads is below the standard for the existing traffic patterns. The HA would therefore need to consider the issues discussed in paragraph 5.3.10 above.

6. BASE YEAR FLOWS

6 BASE YEAR FLOWS

6.1 Opening Year Base Flows

6.1.1 In order to assess the future impact of the development the proposed opening year, 2003, has been assessed to provide the base for comparison. NRTF Central growth has been applied to the 2000 traffic flows equating to a factor of 1.052. AM and PM peak base traffic flows for the opening year 2003 are shown by Figure 6-1 and Figure 6-2 respectively. Flows are represented as *Passenger Car Units* (PCU's). To present a robust base for the traffic flows, the observed queues at the time of the survey have been added to the stop line count information to give a more accurate model of demand as discussed in paragraph 4.2.4 above.

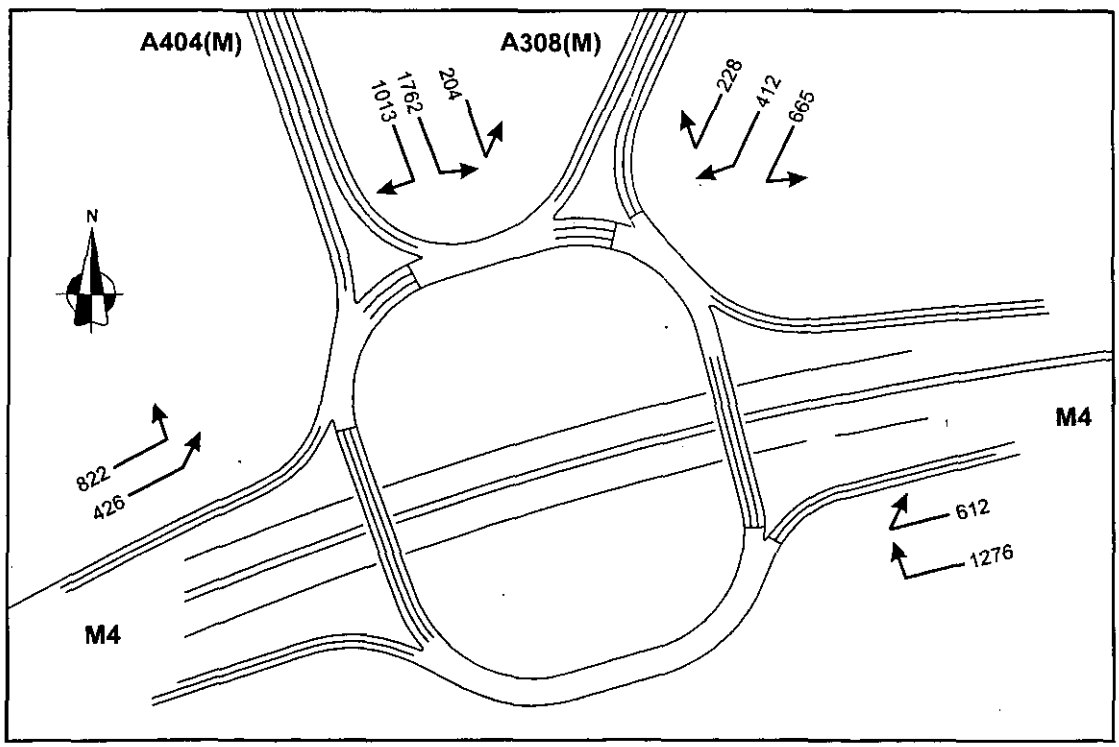


Figure 6-1 2003 Opening Year Base Demand Flows (PCU's) AM Peak

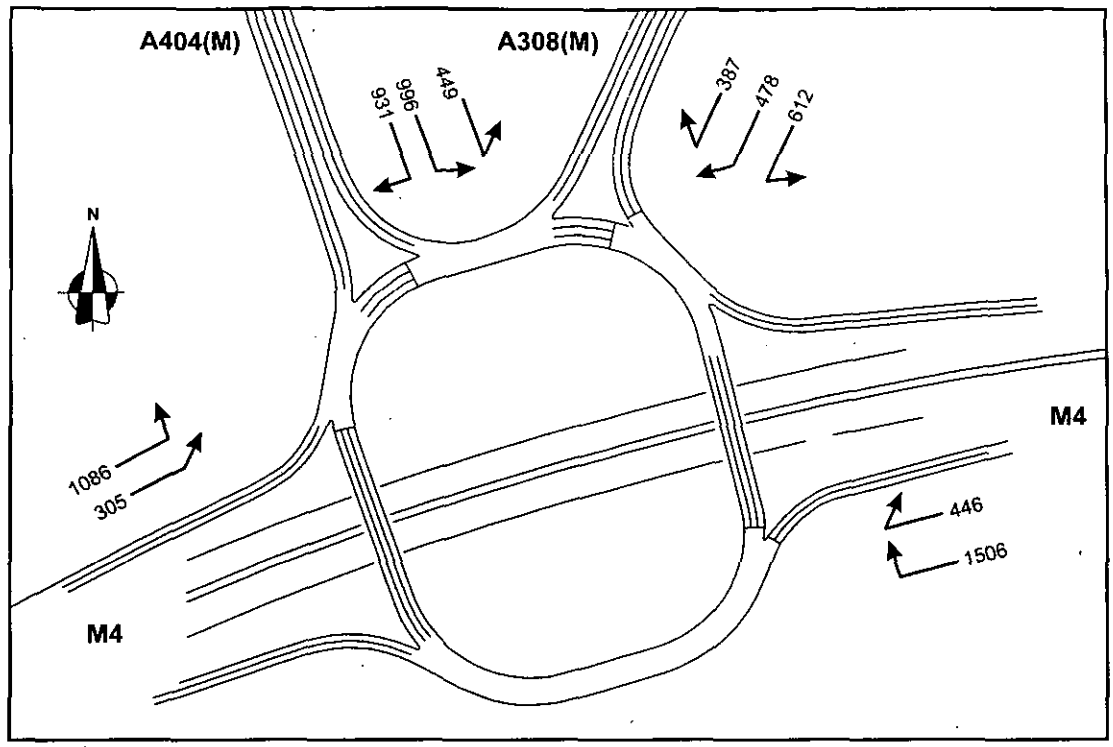


Figure 6-2 2003 Opening Year Base Demand Flows (PCU's) PM Peak

6.2 Future Year Base Flows

6.2.1 Future year flows have also been assessed for 2010 using NRTF Central growth factor of 1.175 applied to the base year. The resultant traffic flows in PCU's are represented by Figure 6-3 and Figure 6-4 for the AM and PM peak respectively.

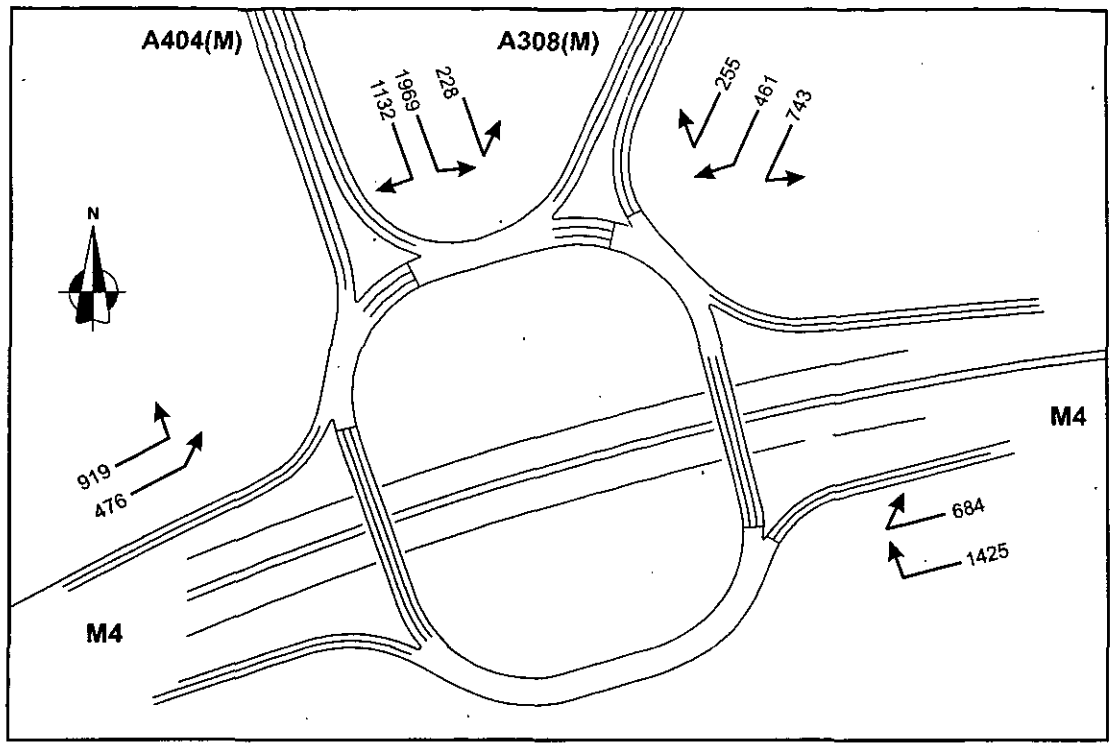


Figure 6-3 **2010 Future Year Base Demand Flows (PCU's) AM Peak**

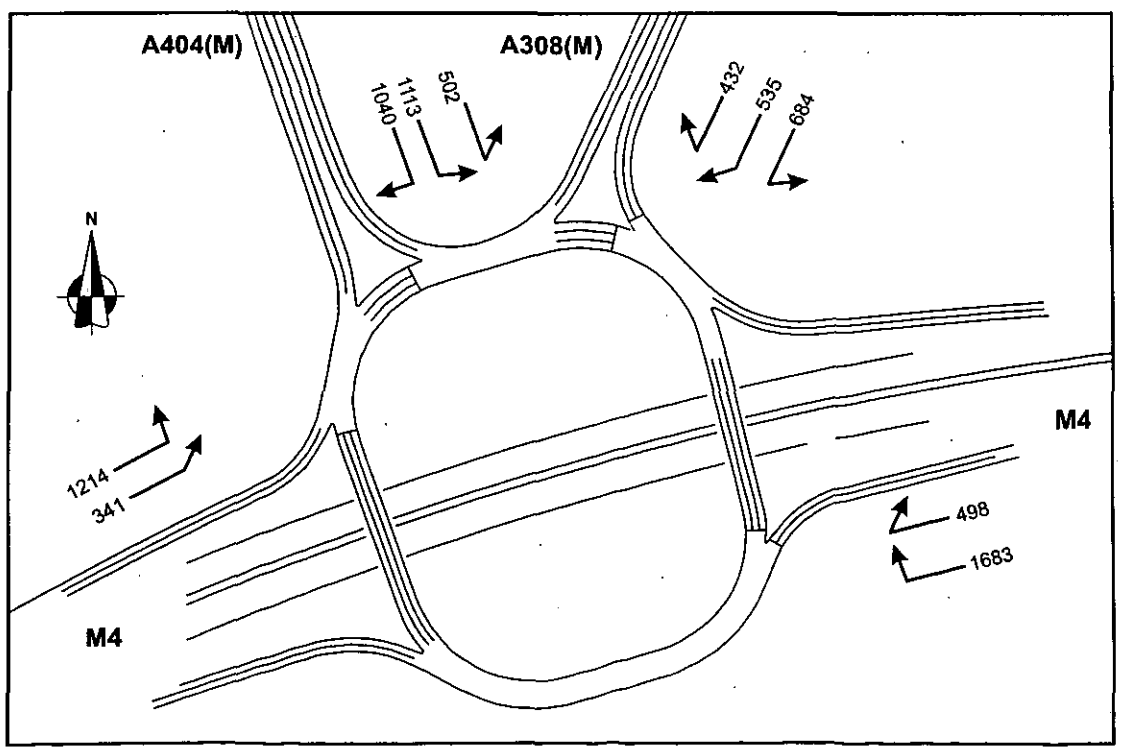


Figure 6-4 **2010 Future Year Base Demand Flows (PCU's) PM Peak**

7. TRAFFIC GENERATION & DISTRIBUTION

7 TRAFFIC GENERATION AND DISTRIBUTION

7.1 Introduction

7.1.1 It is normal when assessing the impact in traffic terms of a proposed development to calculate the volume of traffic that will be attracted to the development. The amount of traffic on the various links on the local highway network is then estimated by predicting the geographical distribution of the trip ends and allocating the traffic on the network accordingly.

7.1.2 Since the purpose of an MSA is to serve existing users of the motorway network there are no additional trips, only the redistribution in the locality of existing traffic. This redistribution would be restricted to the south of the junction in association with the MSA. The following sections describe the methodology that has been used to calculate the volume of traffic that would visit the MSA during the assessment periods and the routes that would be used.

7.2 Turn-In Rates

7.2.1 For the purpose of this assessment the predicted daily turn-in rate of 7.5% has been applied to the peak hour.

7.2.2 It should be noted that experience at other sites is that the turn-in rate during the peak periods falls below the daily average. This reflects the varied travel patterns during peak periods when an element of local commuter traffic is added to the strategic trips. This characteristic is demonstrated in Figure 7-1 below that gives turn-in rates recorded at two *on-line* sites operated by Compass Roadside.

	COMPASS		WELCOME BREAK	
	M4 Reading		M3 Fleet	
Period	MSA Visitors	Turn-in Rate	MSA Visitors	Turn-in Rate
06:00	274	9.9%	-	-
07:00	447	5.4%	657	10.0%
08:00	620	7.2%	775	9.8%
09:00	669	11.0%	933	16.2%
10:00	622	12.7%	883	16.9%
11:00	658	14.8%	913	19.4%
12:00	689	16.5%	955	22.2%
13:00	647	14.9%	878	19.7%
14:00	632	12.5%	891	17.9%
15:00	675	13.2%	818	15.9%
16:00	643	9.5%	837	13.8%
17:00	649	7.6%	835	11.1%
18:00	593	8.0%	719	11.5%
19:00	425	9.5%	-	-

Figure 7-1 Morning Turn-In Rates (All Traffic) at MSA Sites

7.2.3 It will be noted from this table that whilst the turn-in rate for each case rises to an early lunchtime peak, the level of traffic attracted to the MSA is fairly steady.

7.2.4 The above sites are traditional MSA's with spacing of 30+ miles. Maidenhead will be of in-fill style and therefore a rate of 7.5% has been assumed.

7.3 Trip Distribution

7.3.1 Given the restricted access to the MSA, it has been assumed that trips will be drawn exclusively from the westbound carriageway of the M4 Motorway.

7.3.2 For the purposes of calculating the turn-in rate to the MSA, an average peak hour value for traffic approaching the M4 westbound off-slip during February 2000 was obtained from the automatic count data and shown in Figure 7-2. The value for February was employed to ensure consistency with the Thursday manual turning count data used as the base for the TRANSYT model. The relevant values were then converted to PCU's with an assumed HGV content of 20% and NRTF Central growth factors applied to provide flows for 2003 and 2010.

	Automatic Count Data with Ave Peak Value: Site 4088				Ave Peak Feb 2000
AM	08:00	08:00	08:00	08:00	
Thursday	10/02/00	17/02/00	21/02/00	28/02/00	
Vehicles	**5216**	**5413**	**5693**	**5410**	**5433**
PM	18:00	17:00	16:00	17:00	
Thursday	10/02/00	17/02/00	21/02/00	28/02/00	
Vehicles	**6093**	**6325**	**5681**	**6164**	**6066**

Figure 7-2 Average Westbound Peak Hour traffic approaching M4 J8/9 Feb 2000

7.3.3 The assumed 7.5% peak hour turn-in rate was subsequently extracted from this value and redistributed on the network by the following method.

7.3.4 A proportion of traffic that previously sought a destination along the A404(M) and A308(M) will be attracted to the proposed facilities at the MSA, leading to a proportional reduction of traffic emerging from the M4 westbound off-slip to join the roundabout. This traffic would consequently rejoin the roundabout at the MSA exit road before continuing their journey towards the A404(M) and A308(M).

7.3.5 The traffic attracted to the MSA from the westbound carriageway of the M4 at Junction 8/9 is presented in Figure 7-3 below with figures in PCU's. The table also identifies the predicted re-distribution of A404(M) and A308(M) traffic attracted to the MSA.

	2003		**2010**	
Approach	**AM Peak**	**PM Peak**	**AM Peak**	**PM Peak**
M4 Westbound	373	417	388	433
M4 Westbound - A404(M)	99	111	103	116
M4 Westbound - A308(M)	25	28	26	29
Total	**497**	**556**	**517**	**578**

Figure 7-3 Traffic Attracted to MSA

7.3.6 The effect of the change in traffic patterns following the introduction of an MSA would be to increase traffic accessing the westbound M4 off slip, although not on entry to the roundabout.

8. TRAFFIC IMPACT OF PROPOSED MSA

8 TRAFFIC IMPACT OF PROPOSED MSA

8.1 Introduction

8.1.1 The TRANSYT program is the most commonly used method for optimising signal timings in signal networks where benefits can be obtained by co-ordination between adjacent junctions. The method is suitable for roundabouts, where most or all of the arms are signalled. By using various facilities available in TRANSYT, such as link weighting and queue penalties, the program can be used to model traffic behaviour on the roundabout, control queue lengths, and find signal timings such that queues do not form to block upstream junctions.

8.1.2 The method of applying TRANSYT to signalised roundabouts has been designed to arrive at timings that keep the circulating sections of the roundabout free flowing without resulting in significant congestion on entry arms. The method results in entry links running at high degrees of saturation, ideally 85 to 95 percent, which should result in circulatory links having lower degrees of saturation, ideally below 80 percent.

8.1.3 The TRANSYT computer program is a method for finding and studying the 'best' fixed-time signal timings with which to co-ordinate adjacent signal junctions, so that, whenever possible, platoons of traffic can receive a green signal.

8.1.4 TRANSYT uses an off-line model of traffic behaviour on links and signalled nodes to estimate the value of a Performance Index (PI) consisting of a weighted sum of the total vehicle delay and stops in a network. This measure of performance is used by an optimisation routine that systematically alters the signal timings until a set is found that gives *a minimum* PI on the network.

8.2 Access Arrangements

8.2.1 The access to and from the proposed MSA is via a new spur road linking to the southern half of the existing roundabout at junction 8/9 on the M4.

8.2.2 The access will cater for M4 (Westbound) traffic only.

8.3 Link Assessment

8.3.1 Exclusive slip roads and a new southern entry arm onto the roundabout will serve the development. The generated traffic will be diverted from the existing flow passing through the westbound off-slip and redistributed from the motorway. Given this situation, it is only the roundabout that is affected and the entry links into the roundabout. The effect on these is

therefore covered in the following junction assessment section, as part of the capacity assessment of the roundabout.

8.4 Junction Assessment

Existing Network

8.4.1 The roundabout was assessed for both morning and evening peak hours for 2000, 2003 and 2010. Figure 8-1 to Figure 8-10 illustrate the link/node diagrams for the assessment years *with* and *without* the MSA associated with the HA Scheme 1 improvements discussed in Section 5.

8.4.2 The roundabout was also assessed for both the morning and evening peak hours for the assumed opening year of 2003 to examine the HA Scheme 2 improvements 2003 also discussed in Section 5. Figure 8-11 to Figure 8-18 illustrate the relevant link/node diagrams for 2003 associated with the Anticipated HA improvements *with* and *without* the MSA.

8.4.3 The network is represented by junctions (nodes), interconnected by sections of roads (links), each with a unique reference number, and with each link in the network representing one or more traffic lanes.

8.4.4 The TRANSYT results for the existing year 2000, opening year 2003 and design year 2010 follow in Section 10.

Weighting Factors

8.4.5 The TRANSYT networks were built with a series of weighting factors applied to the entry links, in the form of stop and delay weightings. This allows traffic on the circulatory links to get any spare green time at a node and promotes good co-ordination between circulatory and entry link traffic. Queue reduction was applied to keep queue lengths within acceptable limits.

8.4.6 The cycle time is assumed to be 60 seconds for the AM peak and 65 seconds for the PM peak as these are the lowest practical times identified by TRANSYT and agree with the current UTC plan timings supplied by Reading Borough Council.

8.4.7 Once the optimum cycle time had been established, the networks were run to produce optimum green times for each set of traffic signals. From these results the optimum green time settings were substituted into the initial green time settings. Additionally, the weightings and queue reductions were deleted and TRANSYT re-run for each network scenario.

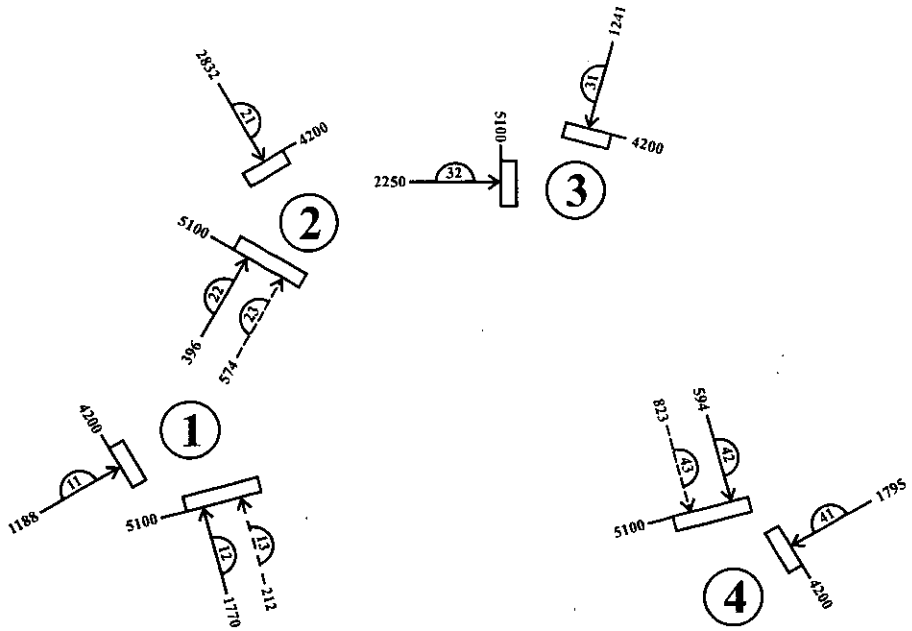


Figure 8-1 Link/Node Diagram - Without MSA (Year 2000 AM Peak) Base

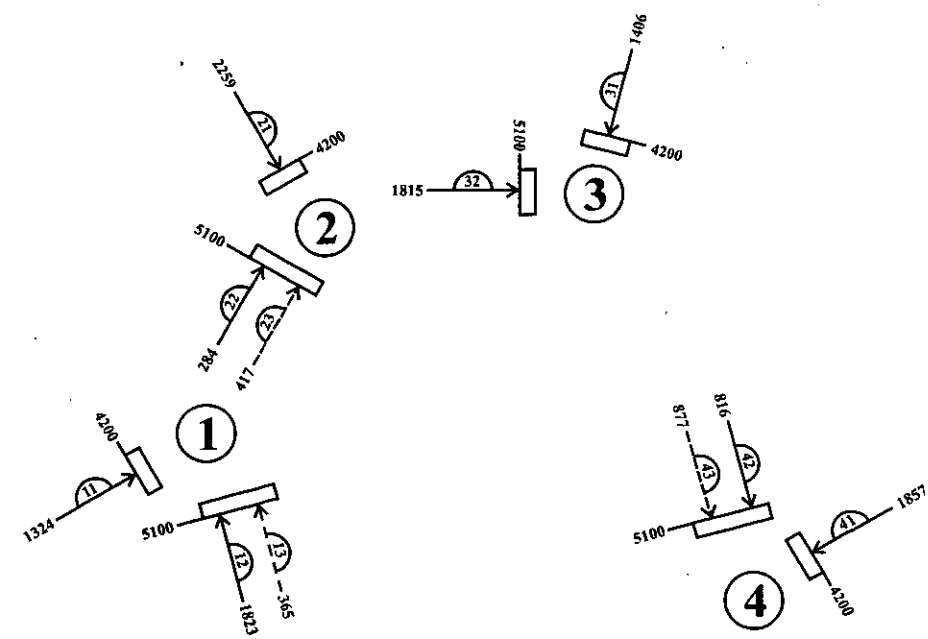


Figure 8-2 Link/Node Diagram - Without MSA (Year 2000 PM Peak) Base

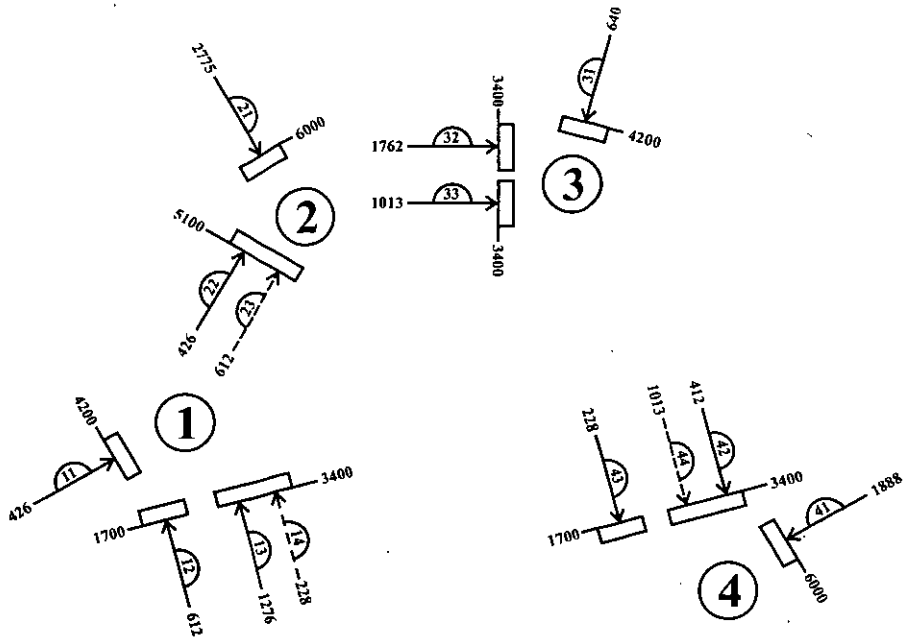


Figure 8-3 **Link/Node Diagram - Without MSA + HA Scheme 1 (Year 2003 AM Peak)**

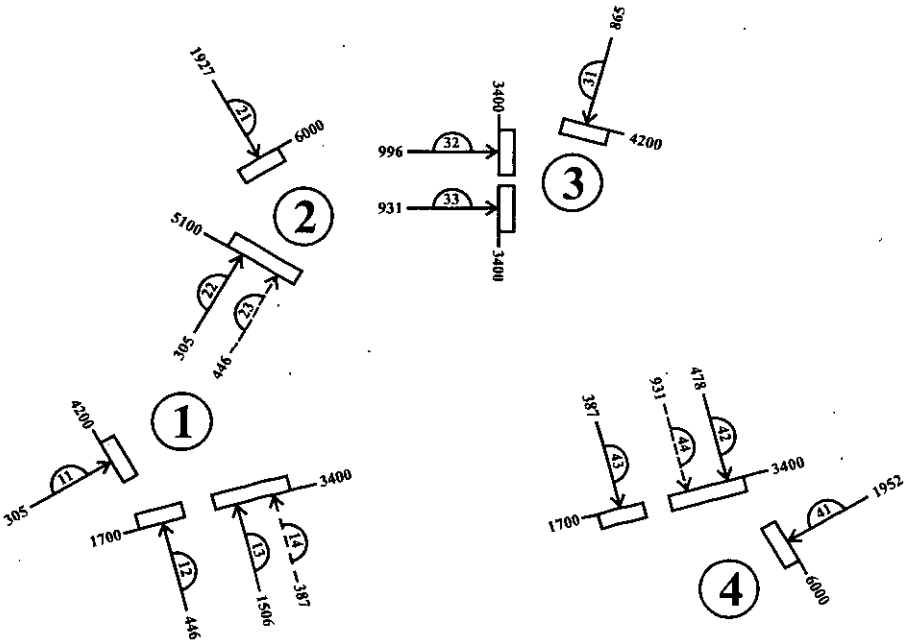


Figure 8-4 **Link/Node Diagram - Without MSA + HA Scheme 1 (Year 2003 PM Peak)**

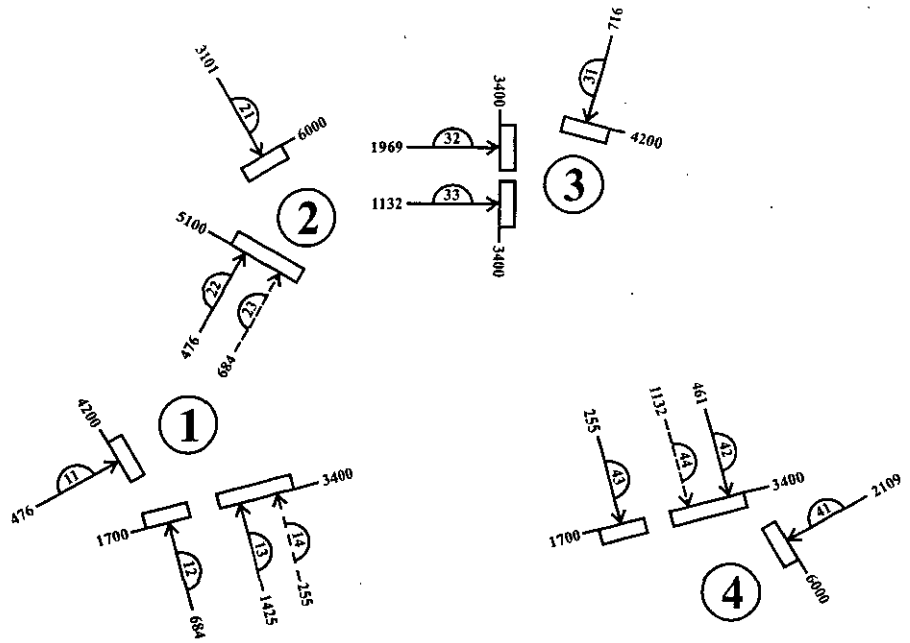


Figure 8-5 **Link/Node Diagram - Without MSA + HA Scheme 1 (Year 2010 AM Peak)**

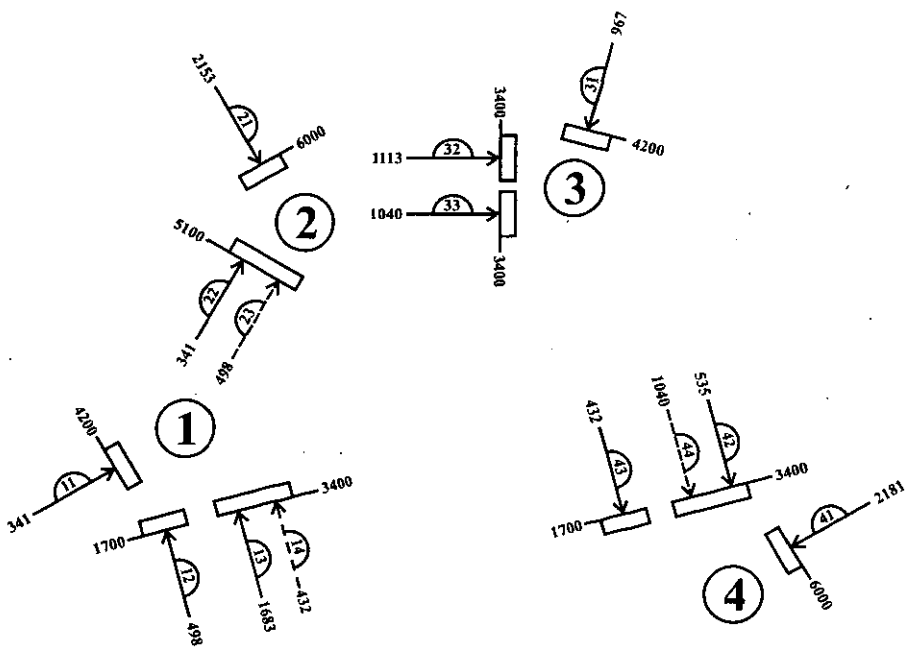


Figure 8-6 **Link/Node Diagram - Without MSA + HA Scheme 1 (Year 2010 PM Peak)**

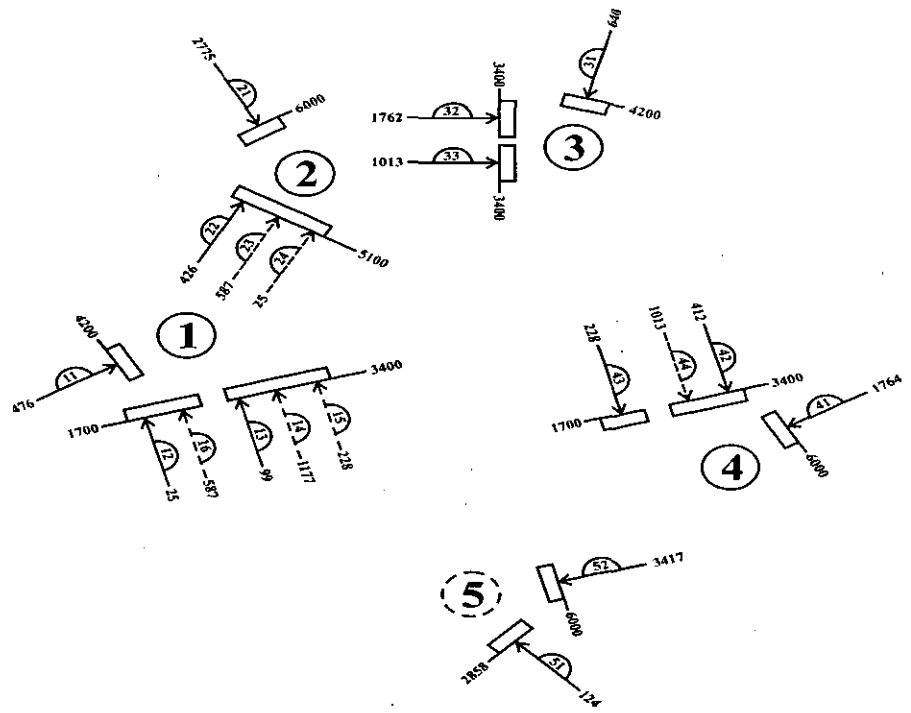


Figure 8-7 Link/Node Diagram - With MSA + HA Scheme 1 (Year 2003 AM Peak)

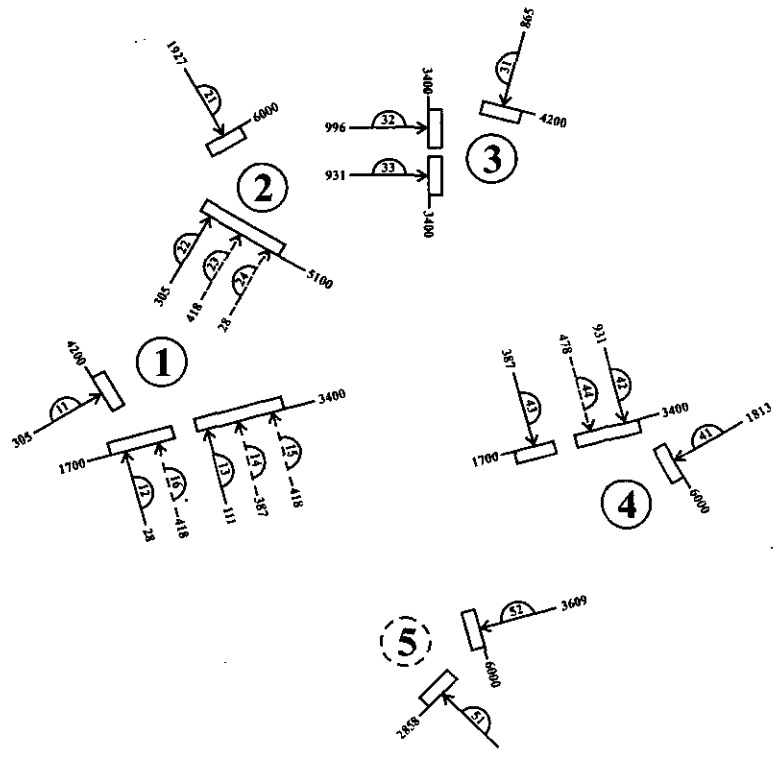


Figure 8-8 Link/Node Diagram - With MSA + HA Scheme 1 (Year 2003 PM Peak)

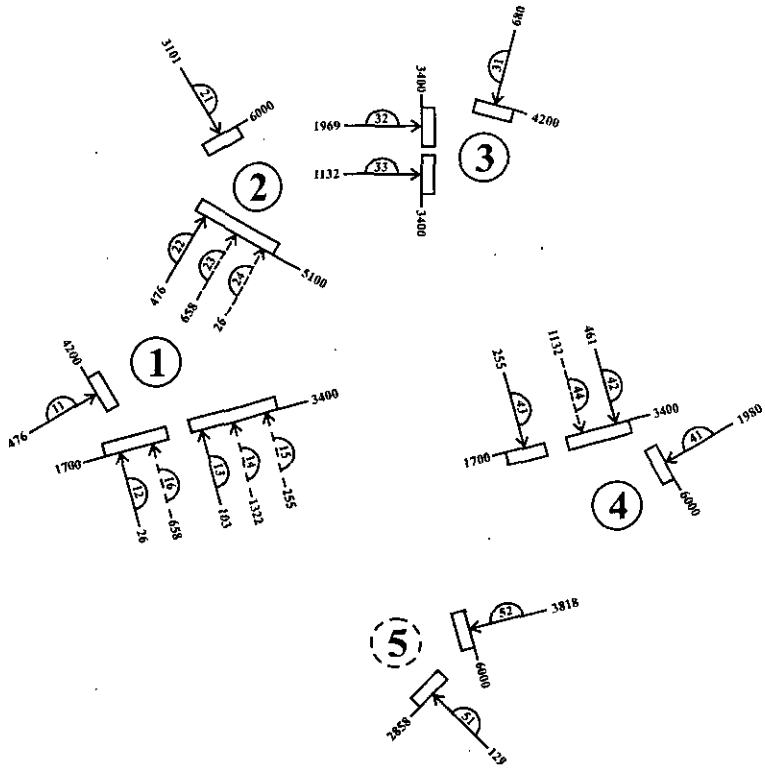


Figure 8-9 Link/Node Diagram - With MSA + HA Scheme 1 (2010 AM Peak)

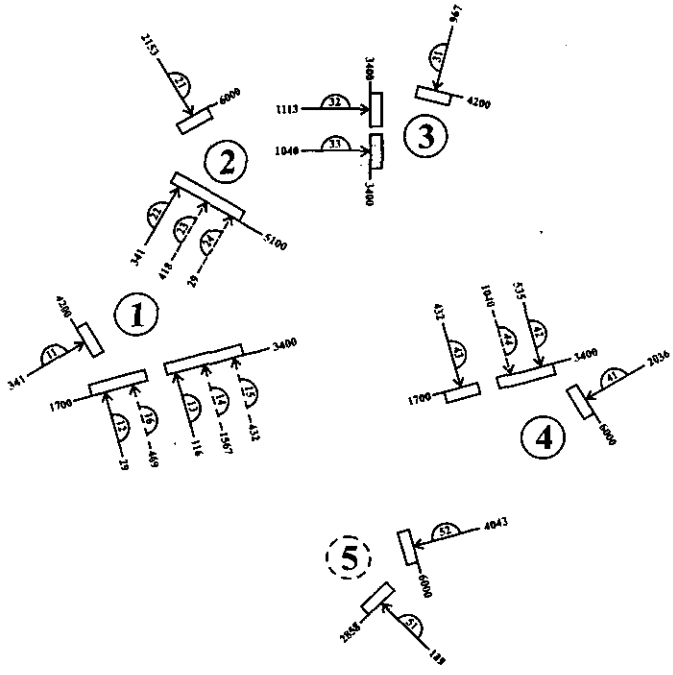


Figure 8-10 Link/Node Diagram - With MSA + HA Scheme 1 (2010 PM Peak)

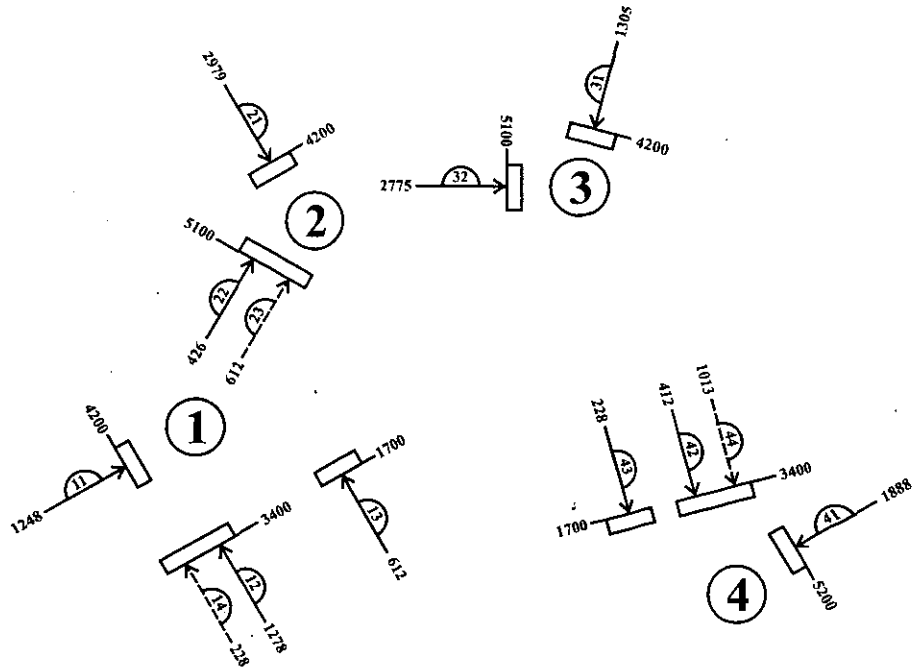


Figure 8-11 Link/Node Diagram - Without MSA, Without HA Schemes (2003 AM Peak)

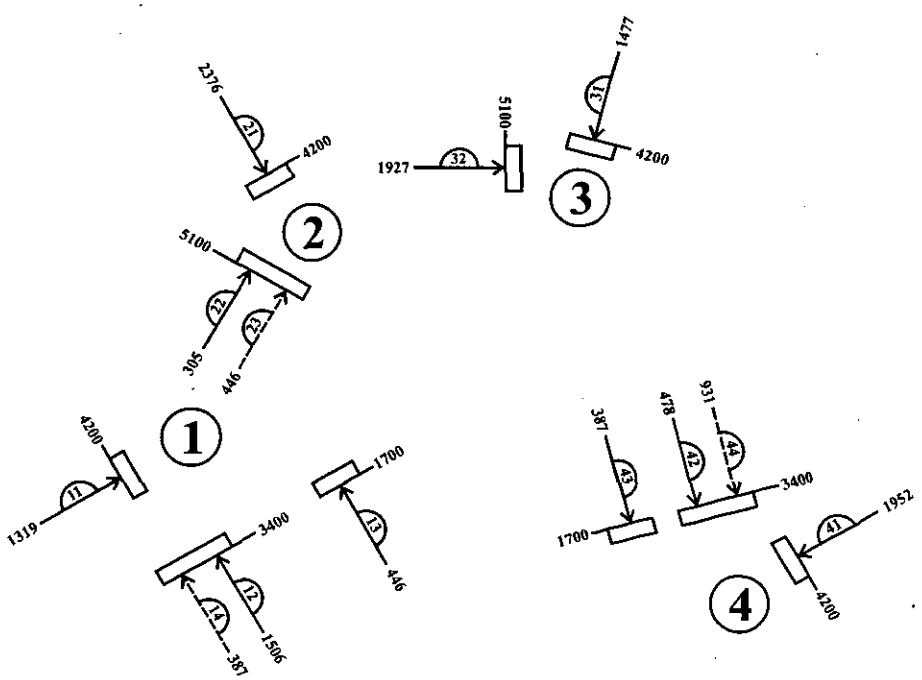


Figure 8-12 Link/Node Diagram - Without MSA, Without HA Schemes (2003 PM Peak)

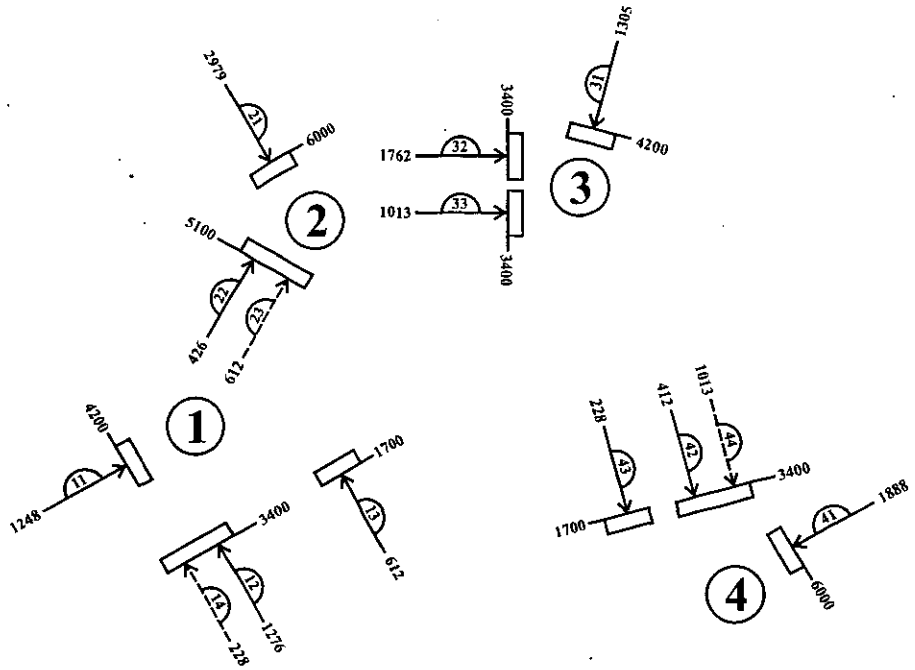


Figure 8-13 Link/Node Diagram - Without MSA With HA Scheme 2 (2003 AM Peak)

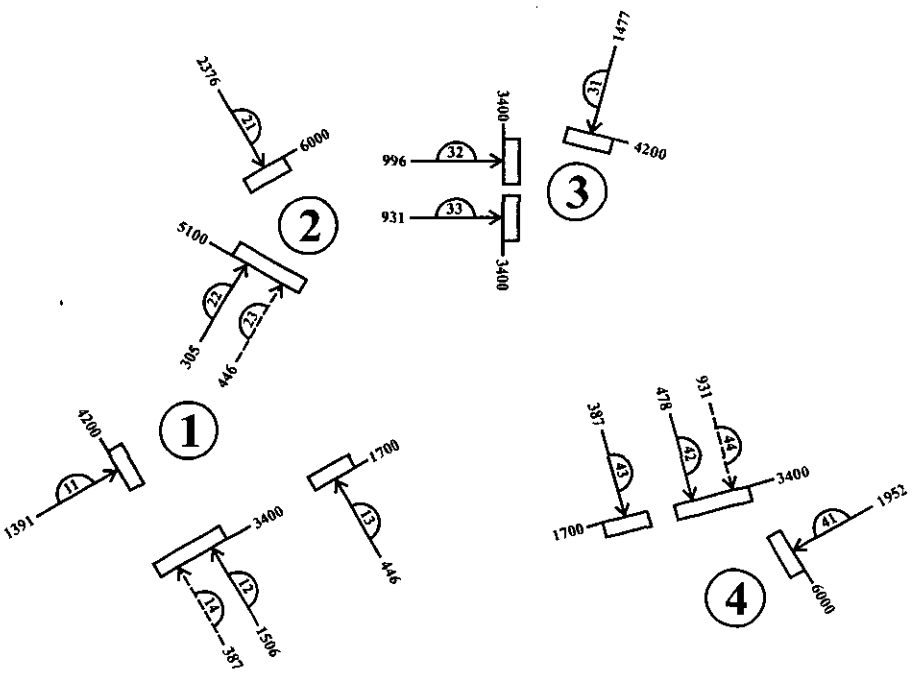


Figure 8-14 Link/Node Diagram - Without MSA With HA Scheme 2 (2003 PM Peak)

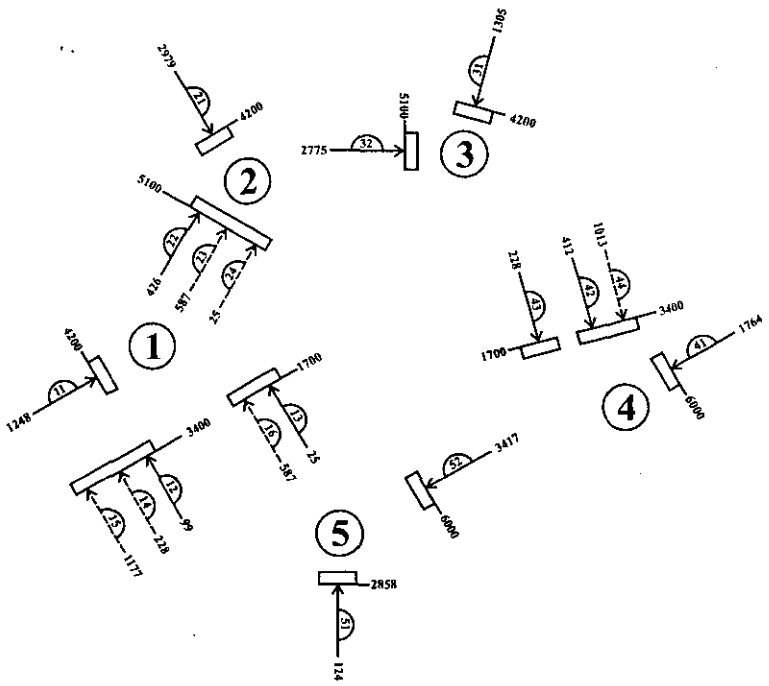


Figure 8-15 Link/Node Diagram - With MSA Without HA Scheme 2 (2003 AM Peak)

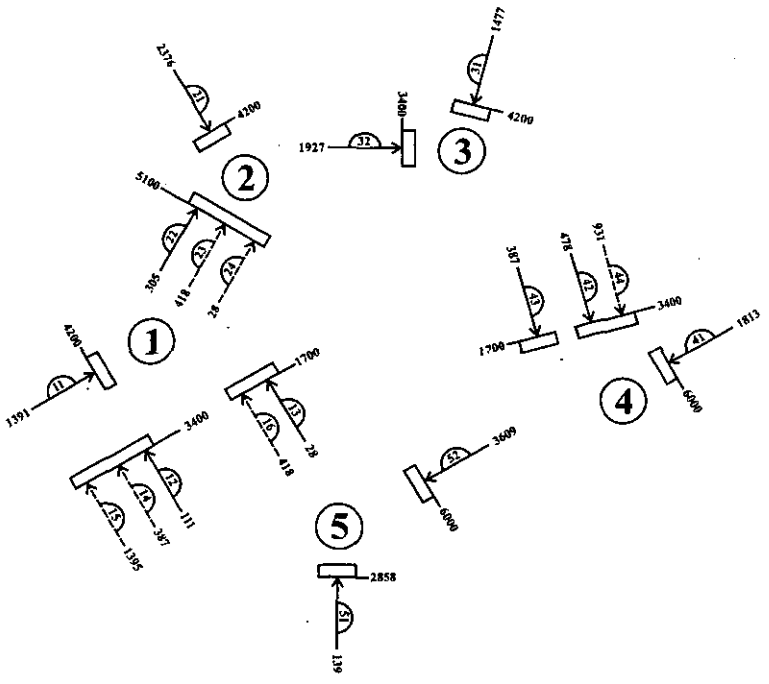


Figure 8-16 Link/Node Diagram - With MSA Without HA Scheme 2 (2003 PM Peak)

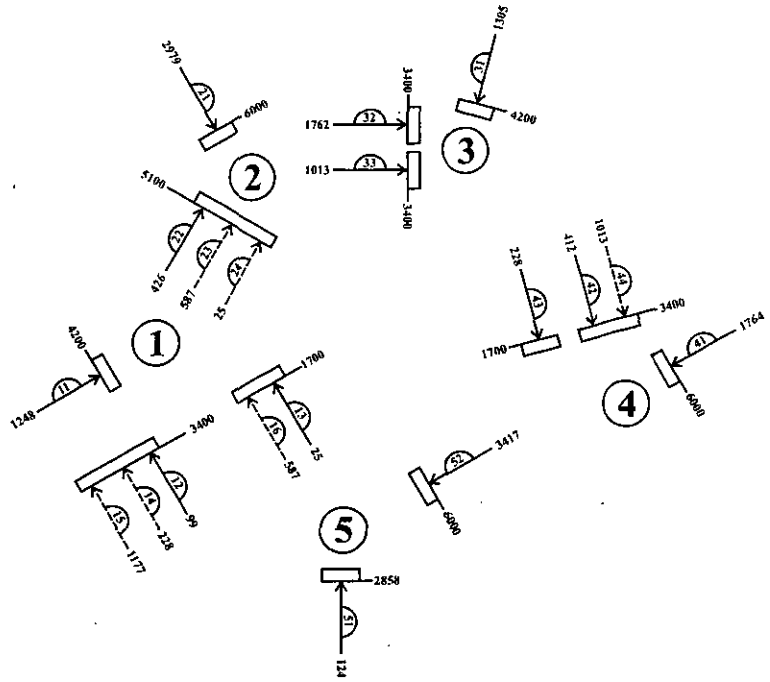


Figure 8-17 Link/Node Diagram - With MSA With HA Scheme 2 (2003 AM Peak)

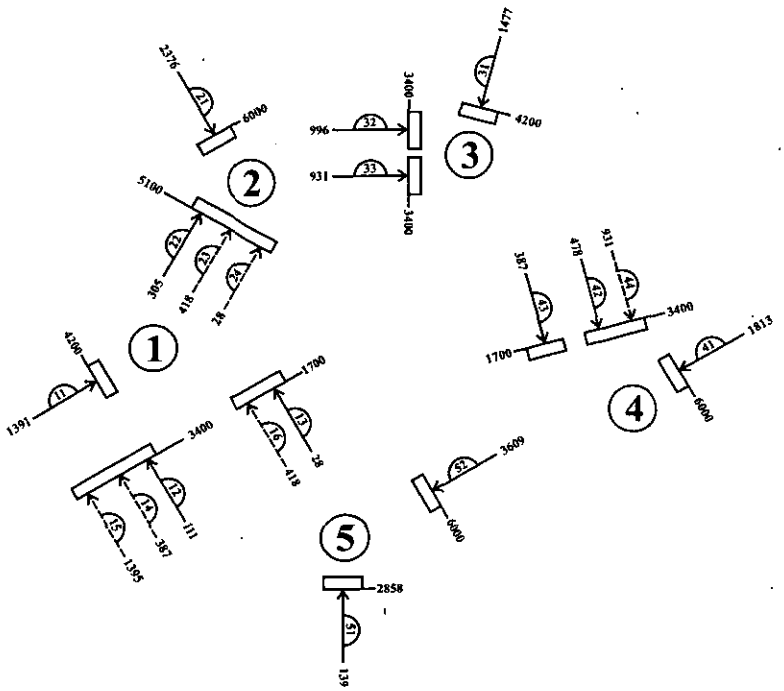


Figure 8-18 Link/Node Diagram - With MSA With HA Scheme 2 (2003 AM Peak)

9. NETWORK SCENARIOS

9 NETWORK SCENARIOS

9.1 General

2000 Base Year

9.1.1 The existing junction was modelled using peak hour UTC Traffic Signal Timings supplied by Reading Borough Council to establish a reliable base model for year 2000. This scenario should form the base for comparison with future assessments.

9.2 Substantial Highways Agency Improvements – HA Scheme 1

2003, 2010 - No MSA with HA Scheme 1

9.2.1 The 2000 traffic flows were factored to 2003 and 2010 using NRTF Central growth rates.

9.2.2 This scenario includes modifications to the existing roundabout geometry, with additional short third lanes on the A404(M) approach, and the M4 westbound off-slip. A short fourth circulatory lane is provided between the A404(M) entry and the A308(M) set of traffic signals. The A308(M) northbound exit from the roundabout is widened to accommodate a third merging lane.

9.2.3 Separate dedicated slip lanes are also provided from the:

- M4 eastbound off-slip to merge with the A404(M) northbound carriageway;
- A404(M) southbound to merge with the A308(M) northbound carriageway, and finally the;
- A308(M) southbound carriageway to merge with the M4 eastbound on-slip

9.2.4 The networks were modified to include additional links to reflect the proposed modifications. No other changes were made to the networks.

2003, 2010 - With Westbound MSA and HA Scheme 1

9.2.5 The networks were modified to include extra links associated with the new MSA. Once again NRTF Central growth rates were applied to obtain 2003 and 2010 traffic flows.

9.2.6 This scenario includes all the modifications to the existing roundabout geometry and associated links described in the "without MSA plus improvements" above. In addition, dedicated slip roads are provided to permit access to the MSA from the M4 westbound off-slip and for traffic rejoining the M4 westbound on-slip from the MSA.

9.2.7 MSA traffic continuing their journey via the A404(M) and A308(M) are provided with a new egress joining the southern circulatory carriageway of the roundabout via a give way.

9.2.8 In order to model this give way approach link, a method supplied by TCSU, the authority responsible for traffic systems in London, has been applied. From an ARCADY assessment of the junction, the slope value for the approach arm is input as the give way coefficient, AI, into the TRANSYT model. Similarly to represent the saturation flow, the intercept value also from the ARCADY model, is converted to an hourly value and input directly to TRANSYT. The relationship between these two values is considered to best represent the saturation flow from a give way node at traffic signals when modelled in TRANSYT.

Performance Index (PI)

9.2.9 The Performance Index (PI) is the sum of the delay and stop costs for each individual link plus any excess queue penalties. In optimising a system of linked signals, TRANSYT seeks to minimise this value. It is a useful measure to demonstrate an improvement or regression in conditions.

9.2.10 By considering the cumulative PI value for the junction, the impact of the various proposals, and the remedial off-site works, has been assessed. Figure 9-1 presents the calculated PI values that relate to the various scenarios tested base on a TRANSYT model with the *limit queue* weighting factor removed.

Year	No MSA		No MSA + HA Scheme 1		With MSA (Westbound)	
	AM	PM	AM	PM	AM	PM
2000	2712.6	1249.9	-	-	-	-
2003	-	-	377.9	298.0	396.5	307.4
2010	-	-	661.6	527.5	635.1	495.4

Figure 9-1 Relative Performance Index

9.2.11 The PI value for the year 2000 situation indicates a junction under stress, especially in the morning peak hour. The potential for at-grade junction improvements without the MSA would realise reduced congestion and an overall improvement during both the morning and evening peak for the opening year of 2003 and extending through to 2010.

9.2.12 Comparison of the PI values both with and without the MSA show the following:

- In 2003 there is an overall improvement in the morning and evening peak that is offset by a small increase in the corresponding peak with the MSA. However the conditions in the evening are less congested.
- In 2010, the overall improvement over 2000 is maintained

9.2.13 It is clear that conditions at the junction will not improve unless there are highway modifications to the existing road layout and method of junction control. The present junction is currently under extreme pressure during peak hours and the likelihood of further deterioration has been recognised by the HA's scheduled junction improvement as defined in the 10 Year Plan.

9.2.14 The proposal covered by this traffic impact appraisal, in addition to accommodating the increased turning movements associated with the MSA, has no detriment to any anticipated substantial improvements that the HA propose for the junction as a whole.

9.3 TRANSYT Results –Highways Agency Scheme 1

9.3.1 The TRANSYT results for the "No MSA" present year is reproduced in Figure 9-2 below with the corresponding results for "No MSA with Junction Improvements" and "MSA with Junction Improvements" for 2003 and 2010, also reproduced in Figure 9-3 and Figure 9-4. The figures are also represented graphically through Figure 9-5 to Figure 9-8 to show the degree of saturation and maximum queues for the relevant years.

9.3.2 In all cases the figures show the degree of saturation and maximum queue for each link and also the Total Performance Index for each option.

Link	AM Peak Hour				PM Peak Hour			
	No MSA		No MSA + HA Scheme 1		No MSA		No MSA + HA Scheme 1	
	Deg Sat	Max Q	Deg Sat	Max Q	Deg Sat	Max Q	Deg Sat	Max Q
11	77	19	-	-	98	36	-	-
12	83	20	-	-	82	25	-	-
13	83	20	-	-	82	25	-	-
21	112	211	-	-	92	42	-	-
22	82	17	-	-	52	10	-	-
23	82	17	-	-	52	10	-	-
31	104	55	-	-	91	28	-	-
32	71	33	-	-	75	34	-	-
41	99	45	-	-	85	31	-	-
42	64	16	-	-	103	66	-	-
43	64	16	-	-	103	66	-	-
Total PI	2712.6		-		1249.9		-	

Figure 9-2 TRANSYT Results for 2000

Link	AM Peak Hour				PM Peak Hour			
	No MSA + HA Scheme 1		With MSA + HA Scheme 1		No MSA + HA Scheme 1		MSA + HA Scheme 1	
	Deg Sat	Max Q	Deg Sat	Max Q	Deg Sat	Max Q	Deg Sat	Max Q
11	68	8	68	8	52	6	59	6
12	53	2	53	5	37	1	36	3
13	65	8	65	15	79	16	77	22
14	65	8	65	15	79	16	77	22
15	-	-	65	15	-	-	77	22
16	-	-	53	5	-	-	36	3
21	82	39	82	39	84	34	84	34
22	76	17	76	16	32	5	32	5
23	76	17	76	16	32	5	32	5
24	-	-	76	16	-	-	32	5
31	91	15	91	15	84	17	84	17
32	78	22	78	22	49	1	49	1
33	45	1	45	1	46	1	46	1
41	90	34	88	31	88	36	85	33
42	87	24	84	19	87	18	84	19
43	28	4	27	4	48	7	46	7
44	87	24	84	19	87	18	84	19
51	-	-	39	1	-	-	48	2
52	-	-	57	1	-	-	60	1
Total PI	493.0		515.5		300.8		307.4	

Figure 9-3 HA Scheme 1 - TRANSYT Results for 2003

Link	AM Peak Hour				PM Peak Hour			
	No MSA + HA Scheme 1		With MSA + HA Scheme 1		No MSA + HA Scheme 1		With MSA + HA Scheme 1	
	Deg Sat	Max Q	Deg Sat	Max Q	Deg Sat	Max Q	Deg Sat	Max Q
11	76	9	76	9	66	7	66	7
12	59	2	58	7	40	2	40	4
13	71	9	71	20	86	23	86	28
14	71	9	71	20	86	23	86	28
15	-	-	71	20	-	-	86	28
16	-	-	58	7	-	-	40	4
21	97	62	97	62	86	38	78	34
22	76	18	75	14	38	7	43	9
23	76	18	75	14	38	7	43	9
24	-	-	75	14	-	-	43	9
31	114	59	109	45	88	20	88	20
32	85	30	85	30	56	3	56	3
33	49	1	49	1	52	2	52	3
41	100	60	94	39	98	56	96	45
42	94	29	95	31	97	36	94	29
43	27	4	29	4	53	8	52	8
44	94	29	95	31	97	36	94	29
51	-	-	65	2	-	-	102	11
52	-	-	63	1	-	-	67	1
Total PI	953.4		871.8		608.2		582.5	

Figure 9-4 HA Scheme 1 - TRANSYT Results for 2010

Existing Year 2000

9.3.3 The TRANSYT results show that the junction is currently operating over capacity in the AM peak, with entry to the roundabout from the A404(M), A308(M) and M4 westbound on-slips displaying the worst congestion. Link 21, A404(M), has a maximum degree of saturation of 112% and a queue of 211 PCU's. The A308(M) entry, Link 31, and the westbound off-slip, Link 41, follow at 104% and 99% respectively in association with queues of 55 and 45 PCU's.

9.3.4 The roundabout is also over capacity during the evening peak, with the highest degree of saturation found on the eastern circulatory Links 42 and 43, each at 103%, and queues of 66 PCU's. This is in response to the high PM peak demand for westbound vehicles leaving the M4 (westbound) and bears direct comparison with the attraction of the M4 eastbound during the AM peak.

9.3.5 All approaches to the roundabout experience delays. The M4 eastbound off-slip, Link 11, has a maximum queue of 36 PCU's and a degree of saturation at 98%. The A404(M) approach

follows with 92% and a queue of 42 PCU's and the A308(M), Link 31, with 91% and a queue of 28 PCU's.

9.3.6 Overall the results highlight the relative dominance of the tidal flow between the A404(M) and the eastern section of the M4 during both morning and evening peak periods.

No MSA With HA Scheme 1 Improvements

9.3.7 Modifications have been determined to improve junction capacity. The foundation for improvement is provided by dedicated slip roads for key traffic movements, supplemented by additional traffic lanes for other critical approach links and the circulatory carriageway.

9.3.8 In the 2000 morning peak, the highest degree of saturation is link 21, A404(M) at 112%. With the proposed improvements, this falls to 82% in 2003 and is predicted to remain below existing levels in 2010.at 97%. During 2000, the maximum queue was 211 PCU's on link 21, A404(M), in the morning peak hour. With the proposed improvements providing an extra lane to the stop line and a dedicated link with the A308(M), this queue is predicted to fall to 39 PCU's. The improvements represent a major reduction in predicted traffic queues compared to the existing situation.

9.3.9 With the proposed improvements in 2003, the A308(M) is predicted to supersede the A404(M) as the link with the highest degree of saturation at 91% during the AM peak, in comparison with 104% currently experienced in 2000. The A308(M) is predicted to remain the most congested link in 2010 with a degree of saturation at 114%.

9.3.10 The PM peak also shows improvement over the 2000 situation, where once again links 21 and 31 are operating at a degree of saturation in excess of 90%. In 2003 the improvements reduce the queues on the main entries to the junction and improve capacity on the main circulatory carriageway. The improvement carries through to 2010 where despite anticipated increases in traffic through the junction, the predicted queue levels generally remain below 2000 values with the notable exception of link 41 where there is a rise from 31 to 36 PCU's in 2003 and 56 in 2010.

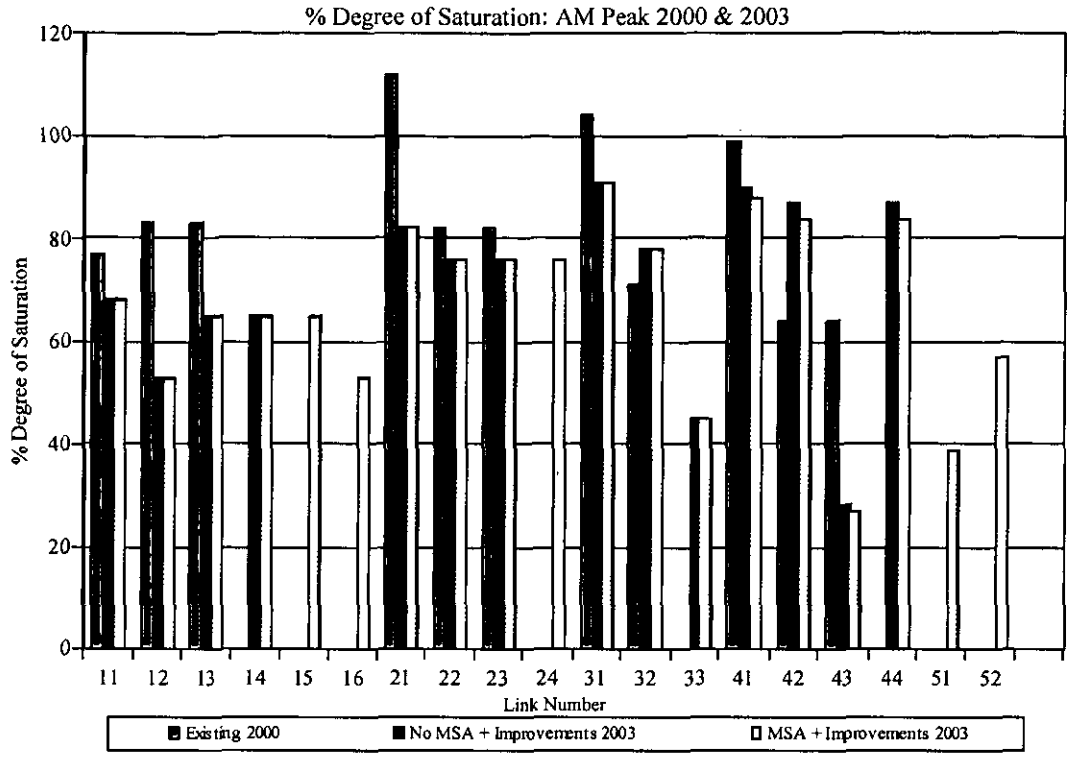
MSA With HA Scheme 1 Improvements

9.3.11 Based on the assumed Highway Agency scheme, the junction to south of the M4 has no detriment following with the inclusion of the new access/egress to the MSA.

9.3.12 The MSA will attract new traffic from the M4 and a proportion of drivers that currently use the westbound off-slip to gain access to the A404(M) and A308(M). The provision of dedicated slip roads linking with M4 westbound on and off-slip roads will allow the majority of drivers to enjoy the benefit of the facilities without adding to congestion at the roundabout.

9.3.13 Drivers continuing their journey via the A404(M) and A308(M) will re-join the roundabout at a different point, with a corresponding traffic reduction at the stop line on the M4 westbound off-slip. This will herald benefits for the eastern circulatory carriageway on its approach to the M4 westbound off-slip, as demonstrated by the relative benefits for links 41 through to 44 shown by the with MSA scenario for the PM peak in both 2003 and 2010.

9.3.14 The tabulated results show the real benefits to be secured by providing the scale of junction improvements proposed. Generally these benefits carry through from opening year in 2003 to 2010, as shown by the total performance index of each option.



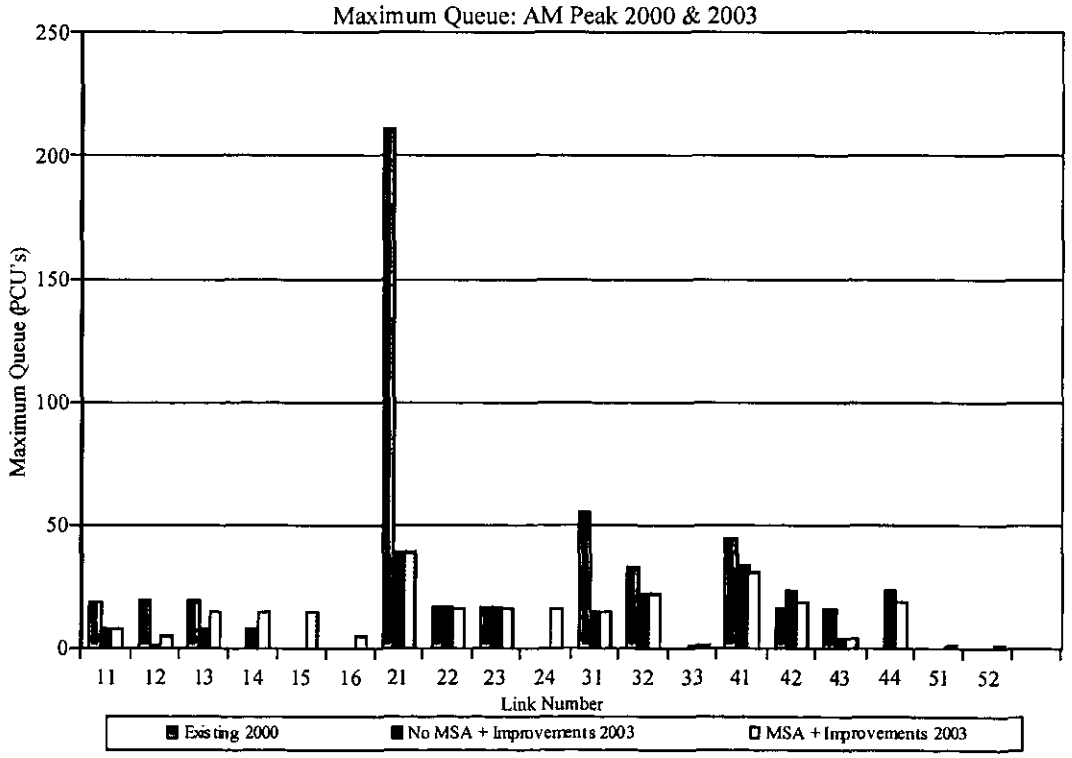
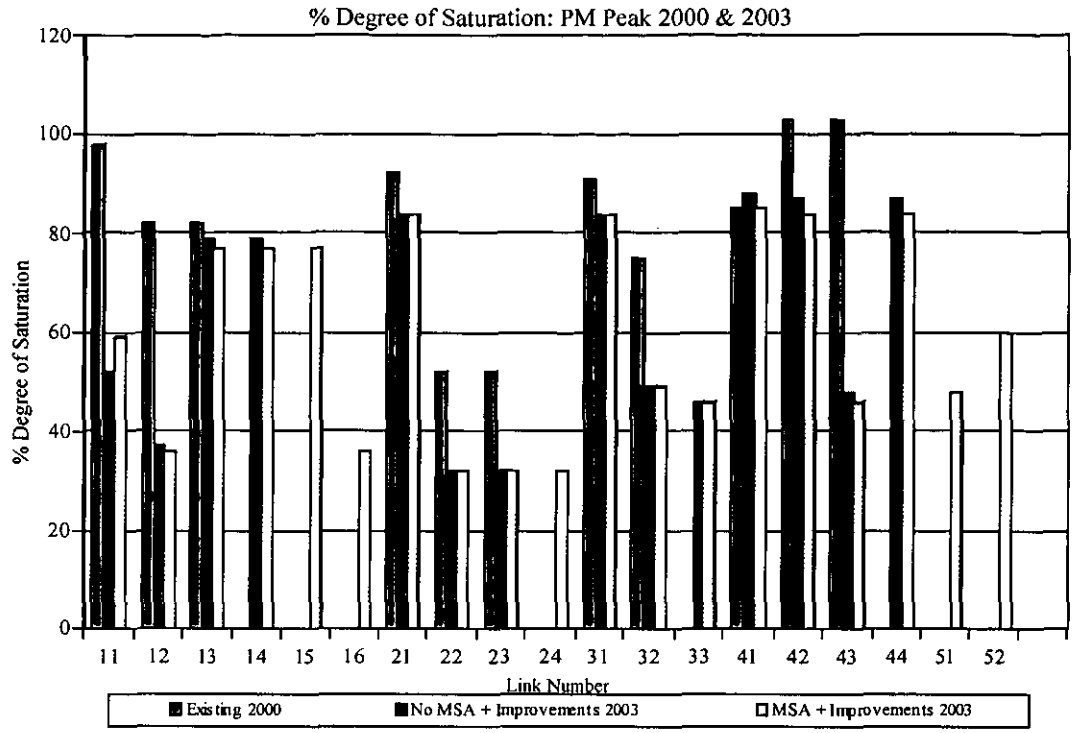


Figure 9-5 HA Scheme 1: Degree of Saturation & Queues AM Peak 2000 & 2003



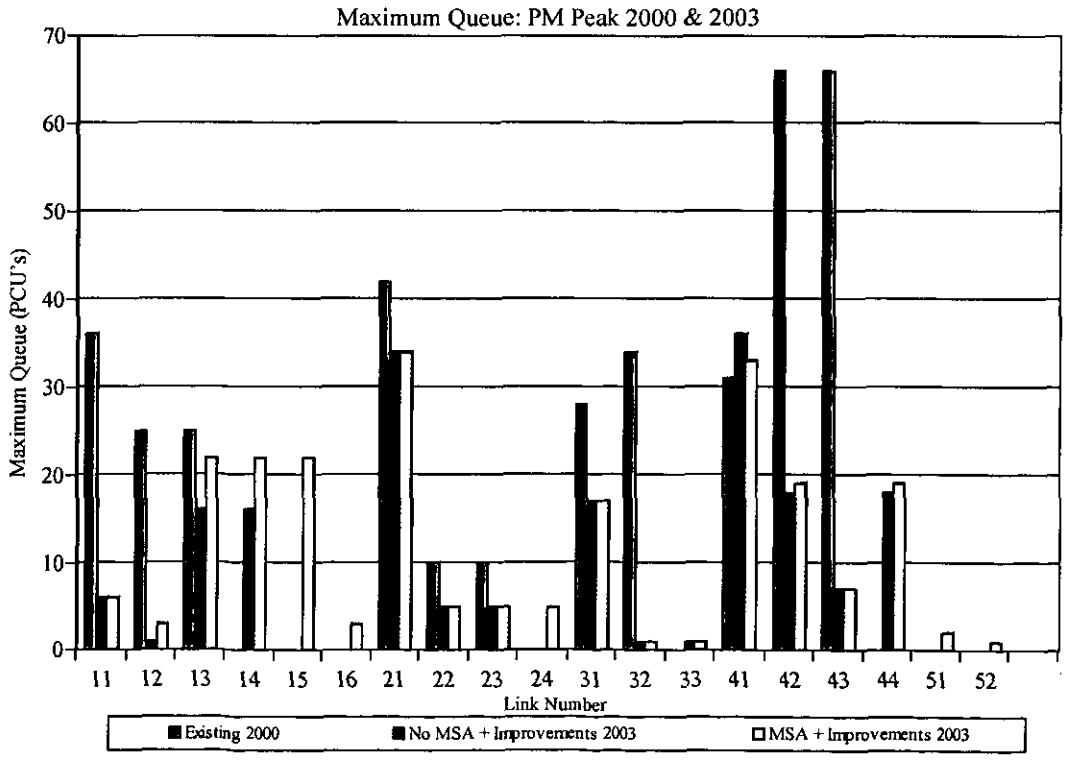
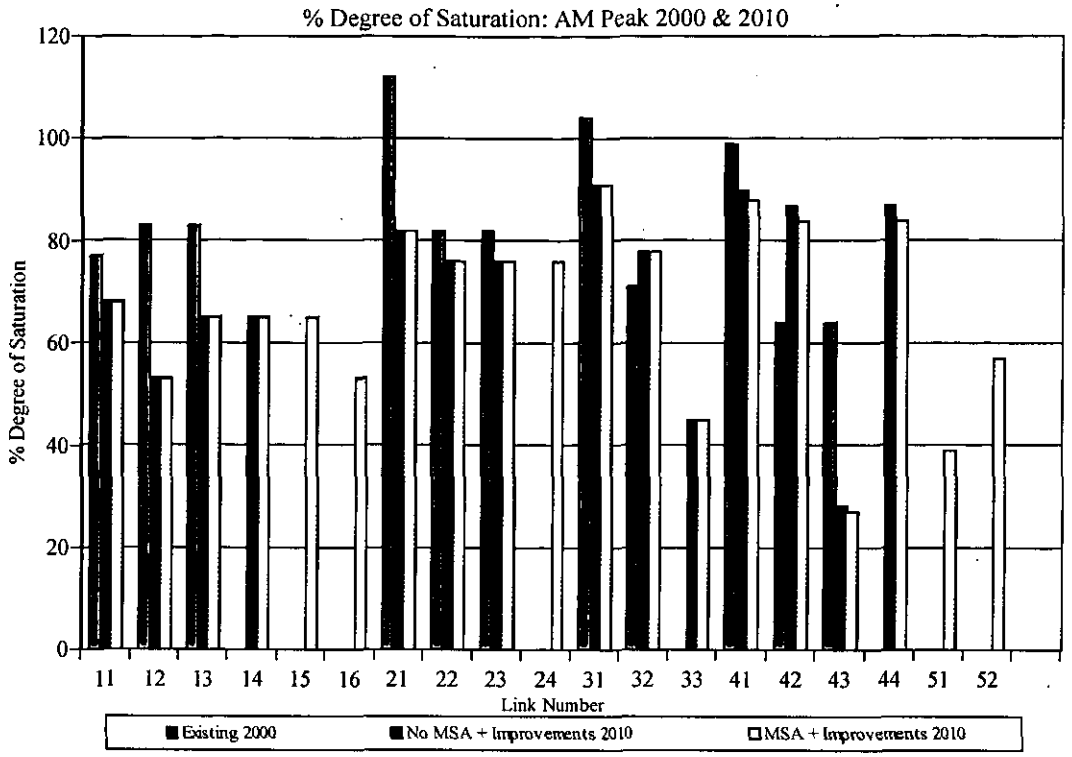


Figure 9-6 HA Scheme 1: Degree of Saturation & Queues PM Peak 2000 & 2003



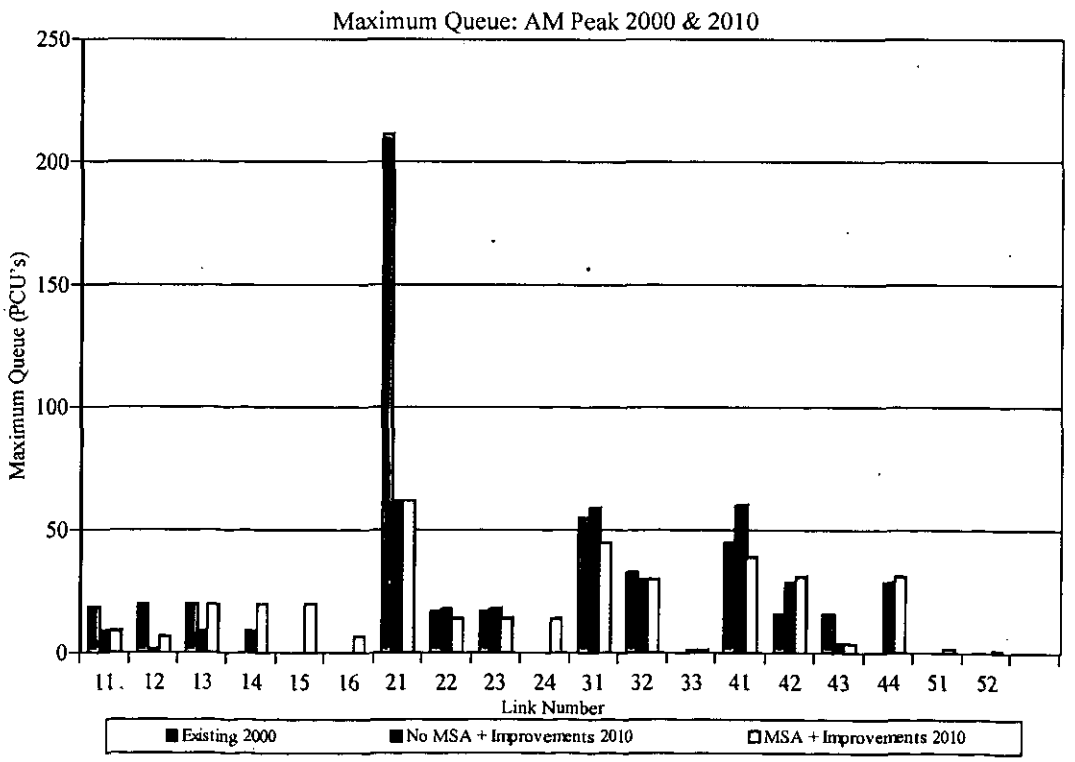
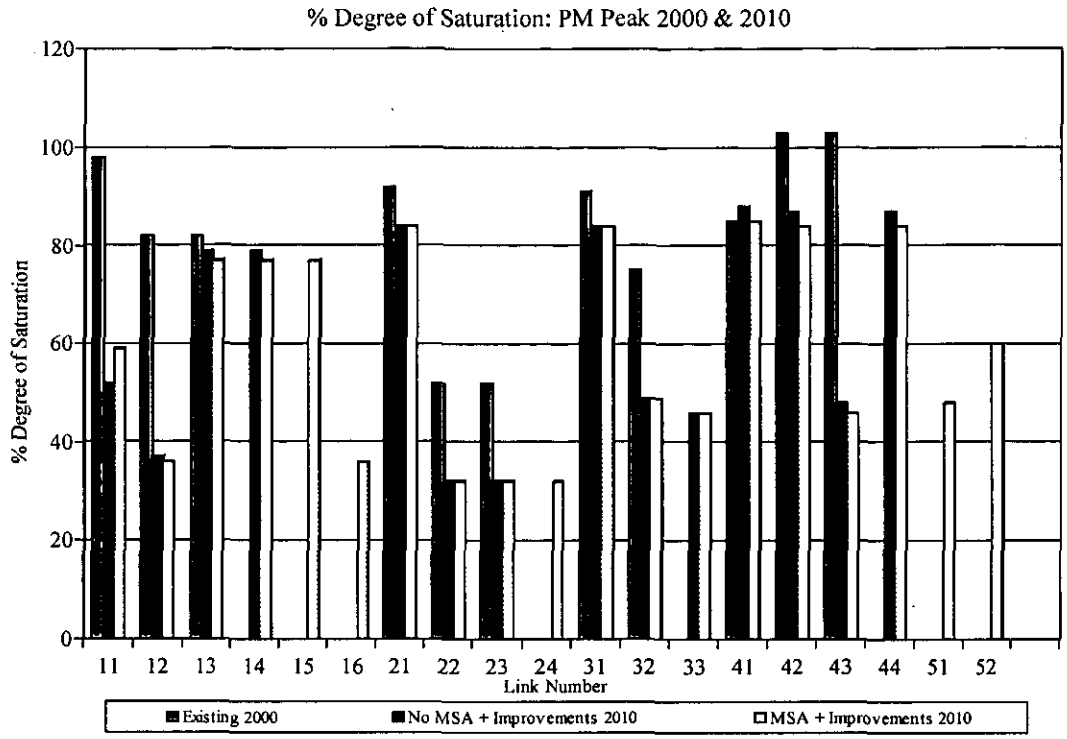


Figure 9-7 HA Scheme 1: Degree of Saturation & Queues AM Peak 2000 & 2010



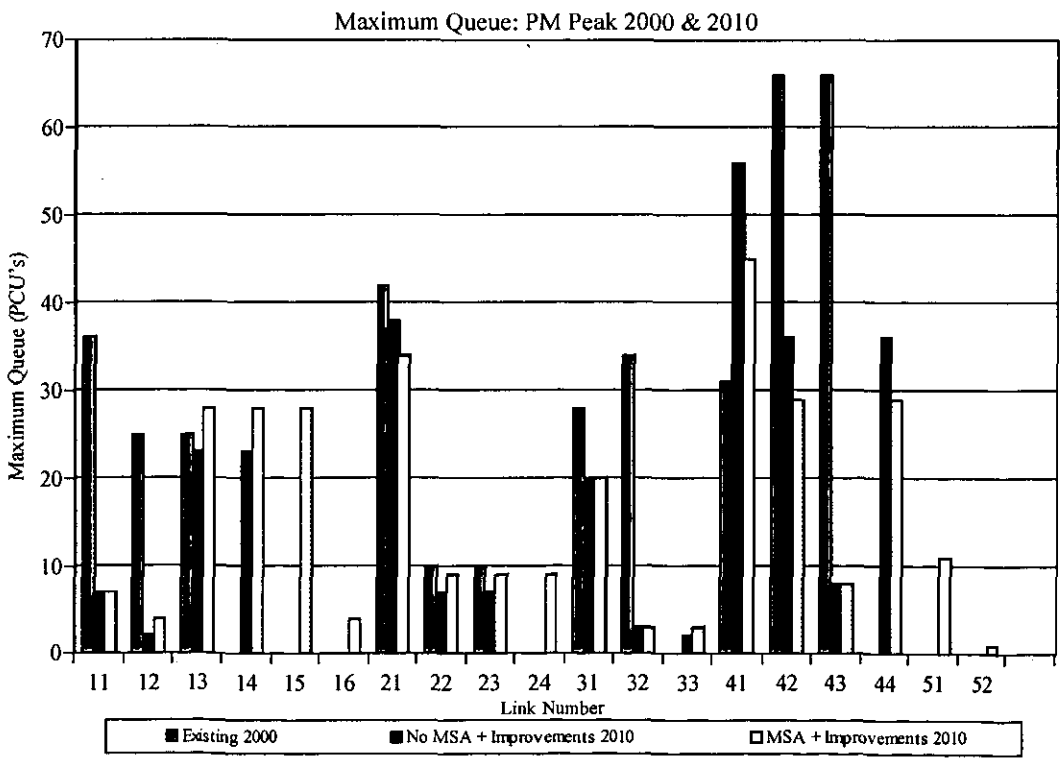


Figure 9-8 HA Scheme 1: Degree of Saturation & Queues PM Peak 2000 & 2010

9.4 Anticipated Highways Agency Scheme 2003 "With" and "Without" MSA - HA Scheme 2

General

9.4.1 Section 5 discusses the potential for improvements to be made at the junction by the Highways Agency. The fact that the scale of these improvements may be of a lower magnitude in the short term is also recognised and therefore the second part of this assessment examines the operation of the junction assuming a reduced Highways Agency scheme.

9.4.2 It has been assumed in the following that the Highways Agency improvement in 2003 would concentrate on the provision of the most cost-effective option developed in paragraph 5.3.12 above.

2003 Opening Year – No HA Scheme 2 Improvements

9.4.3 The predicted traffic flows used to determine the earlier scenarios were used to establish a base model for year 2003. This scenario should form the basis of comparison with the following assessments.

2003 Opening Year –Anticipated HA Scheme 2 Improvements; No MSA

9.4.4 The junction was modelled for the assumed opening year of 2003 with the anticipated Highway Agency improvements provided for the junction.

2003 – With Westbound MSA; No Anticipated HA Scheme 2 Improvements

9.4.5 The network was modified to include only the extra links associated with the proposed MSA and therefore includes the dedicated slip roads that will permit access to the MSA from the M4 westbound off-slip and for traffic rejoining the M4 westbound on-slip from the MSA. The model also includes the new egress joining the southern circulatory carriageway of the roundabout via a give way.

2003 – With MSA and Anticipated HA Scheme 2 Improvements

9.4.6 This scenario includes the modified network required to serve the MSA and the modifications to the existing roundabout geometry that have been assumed to form the anticipated Highways Agency scheme indicated in paragraph 9.2.2.

9.5 TRANSYT Results - Anticipated HA Scheme 2 Improvements 2003

9.5.1 The AM and PM TRANSYT results for the 2003 opening year for various scenarios are reproduced by Figure 9-10 to Figure 9-11 below. The tables also provide comparison of the corresponding results for the "With MSA and No HA Improvements" and "With MSA and Anticipated HA improvements" scenarios.

9.5.2 These figures are represented graphically by Figure 9-12 and Figure 9-13 to show the degree of saturation and maximum queues during the peak hours for the opening year.

Link	Opening Year 2003 Base			
	AM Peak Hour		PM Peak Hour	
	Deg Sat	Max Q	Deg Sat	Max Q
11	90	27	105	71
12	83	16	94	25
13	68	3	47	2
14	83	16	94	25
21	121	330	94	49
22	75	19	56	12
23	75	19	56	12
31	104	58	154	292
32	81	12	60	11
41	98	51	102	69
42	91	27	92	26
43	32	4	37	1
44	91	27	92	26
Total PI	1333.6		1519.1	

Figure 9-9: 2003 TRANSYT Results for 2003 No MSA No HA Scheme 2

Link	AM Peak Hour					
	HA Scheme 2 - 2003		With MSA + No HA Scheme 2 - 2003		MSA + HA Scheme 2 - 2003	
	Deg Sat	Max Q	Deg Sat	Max Q	Deg Sat	Max Q
11	77	24	90	27	91	28
12	75	7	79	22	69	20
13	61	2	65	8	57	7
14	75	7	79	22	69	20
15	-	-	79	22	69	20
16	-	-	65	8	57	7
21	89	54	121	330	87	52
22	68	15	73	17	71	17
23	68	15	73	17	71	17
24	-	-	73	17	71	17
31	109	84	99	40	109	84
32	91	26	83	16	91	25
33	52	1	-	-	52	1
41	88	38	79	32	86	35
42	82	21	76	21	80	20
43	25	3	27	1	24	4
44	82	21	76	21	80	20
51	-	-	38	1	35	1
52	-	-	54	1	56	1
Total PI	768.8		1139.5		808.4	

Figure 9-10 2003 TRANSYT Results: AM Peak

Link	PM Peak Hour					
	HA Scheme 2 - 2003		With MSA + No HA Scheme 2 - 2003		MSA + HA Scheme 2 - 2003	
	Deg Sat	Max Q	Deg Sat	Max Q	Deg Sat	Max Q
11	90	30	105	71	95	35
12	93	23	95	38	91	33
13	44	1	45	5	43	5
14	93	23	95	38	91	33
15	-	-	95	38	91	33
16	-	-	45	5	43	5
21	87	45	94	49	89	46
22	37	9	54	12	36	9
23	37	9	54	12	36	9
24	-	-	54	12	36	9
31	95	35	154	292	91	32
32	60	3	60	4	62	3
33	56	3	-	-	58	3
41	91	41	85	35	88	36
42	83	21	73	21	81	22
43	46	7	30	3	44	5
44	83	21	73	21	81	22
51	-	-	34	1	47	2
52	-	-	55	1	60	1
Total PI	549.8		1526.2		663.6	

Figure 9-11: 2003 TRANSYT Results PM Peak

2003 Results

9.5.3 As highlighted in the previous sections, the TRANSYT results reaffirm the position that the junction will continue to deteriorate in the absence of improvement. The anticipated benefits to be provided by the Highways Agency will arrest this decline and provide an overall improvement for the public to ease their journey during both the AM and PM Peak periods.

AM Peak

9.5.4 Without improvements the AM in 2003 is distinguished by high degrees of saturation on all approach arms with consequent queues. Links 21 and 31 are the most saturated links during this period.

9.5.5 During the AM peak with no highway improvements to relieve the present conditions, link 21 A404(M) shows severe congestion with a predicted degree of saturation of 121% during the AM peak and an associated maximum queue of 330 PCU's. The values remain stable even with the addition of the MSA without HA Scheme 2 improvements. With the anticipated HA Scheme 2 in place, the queues reduce to 54 PCU's on Link 21 and the degree of saturation falls to 89%. Adding the MSA to these improvements provides a further benefit with corresponding values of 87% and 52 PCU's.

9.5.6 Link 31 A308(M) is over saturated in 2003 for the AM peak at 104%, with a predicted queue of 58 PCU's under the "No Improvement" scenario. The HA Scheme 2 improvements provide higher equivalent values of 109% and 84 PCU's. It is however significant that an improvement to the link is provided by the introduction of the MSA with no HA Scheme 2, yielding figures of 99% and 40 PCU's respectively.

PM Peak

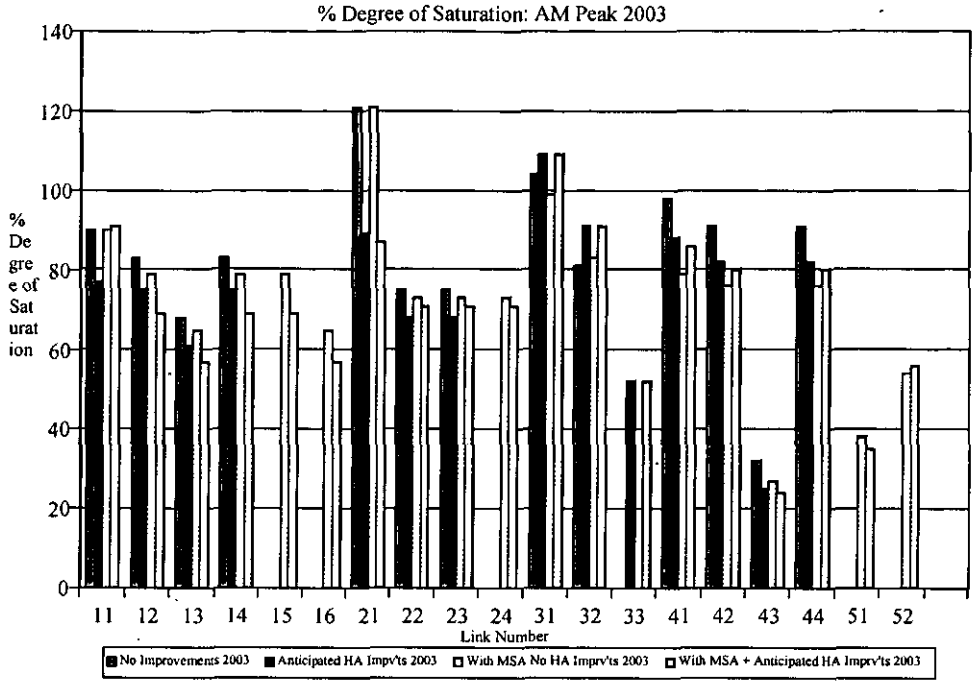
9.5.7 Without junction improvements, over saturation is also a feature of the PM peak in 2003. Link 31 is the most saturated at 154% with queues of 292 PCU's followed by link 11 at 105% and a queue of 71 PCU's and Link 41 with 102% and a queue of 69 PCU's.

9.5.8 The degree of saturation and predicted queue for Link 31 is "no worse off" under conditions where the MSA with No HA Scheme 2 is tested. The anticipated HA Scheme 2 heralds a fall in saturation to 95% with maximum queues also falling significantly to 35 PCU's. This benefit is further enhanced with the addition of the MSA that would deliver corresponding values of 91% and 32 PCU's.

9.5.9 The application of the "MSA without HA Scheme 2 - 2003" scenario to Link 11 again reveals a "No worse" situation when reviewed against the "no HA Scheme 2 improvement" situation, remaining fixed at 105% with queues of 71 PCU's. The HA Scheme 2 is predicted to improve conditions on this link, with the degree of saturation falling to 90 % and queues of 30 PCU's.

9.5.10 Link 41 secures an improvement with the "MSA without HA Scheme 2 - 2003" at 85% with maximum queues predicted to reduce to 35 PCU's. The same comparison with the HA Scheme 2 improvements also realise a slightly reduced benefit for the link. The corresponding queues in the PM peak are predicted to fall to 41 PCU's in association with a degree of saturation of 91%. The level of benefit is improved once again with the introduction of the MSA.

9.5.11 By comparing the link results both collectively and individually, it is notable that the introduction of the proposed Westbound MSA has no marked impact on the benefits to be derived from the HA Scheme 2. Even without the anticipated HA Scheme 2 improvements the provision of the proposed westbound MSA provides a solution that would leave conditions on at the junction no worse than if the development had not taken place.



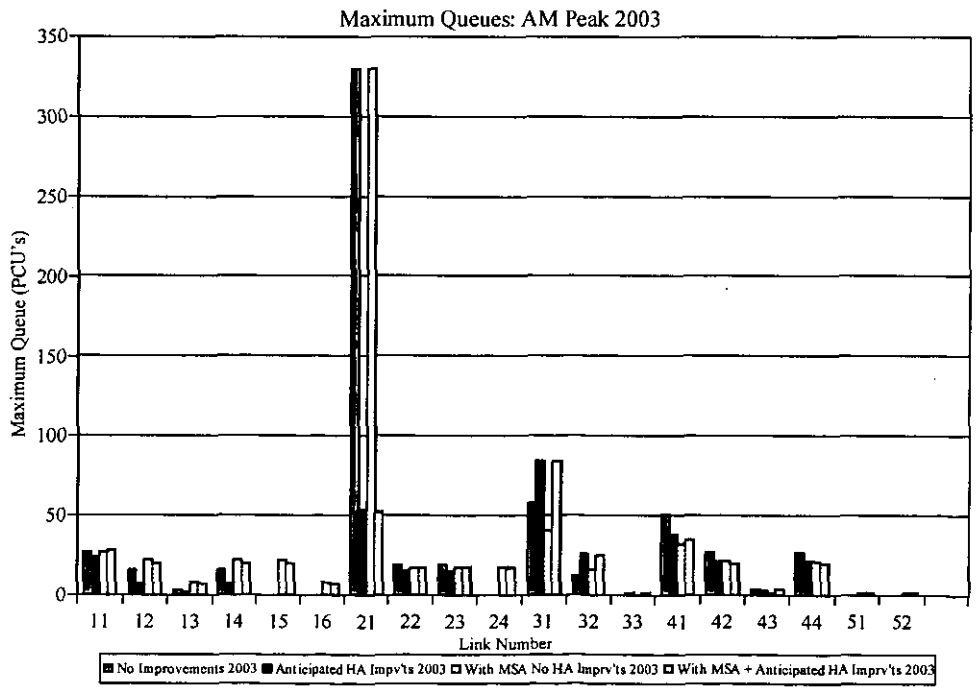
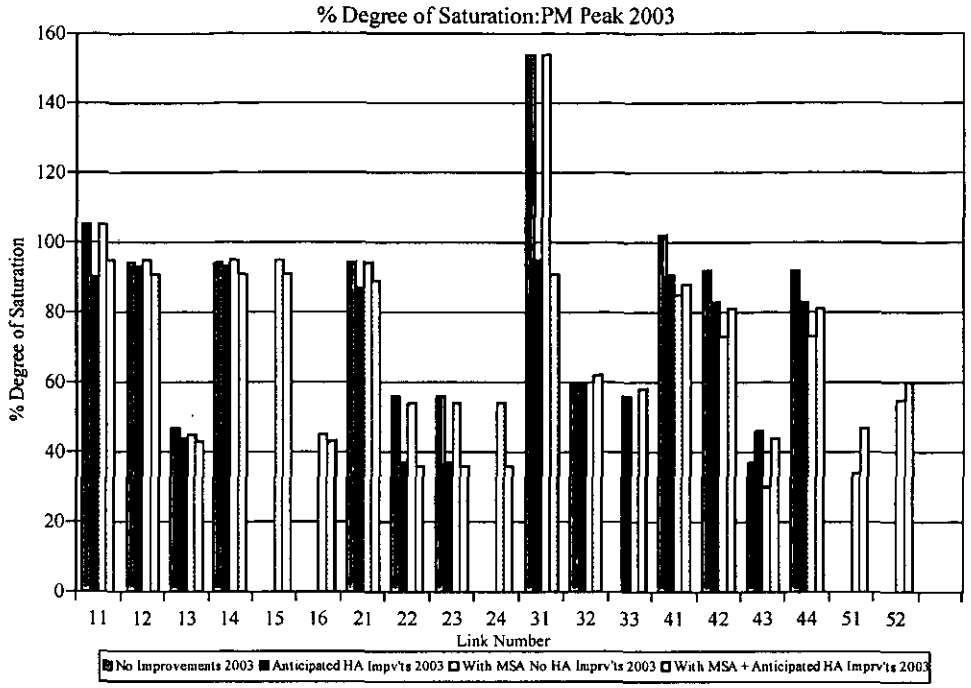


Figure 9-12: Degree of Saturation & Queues AM Peak 2003 – Comparison of HA Scheme 2 improvements "With" and "Without" MSA



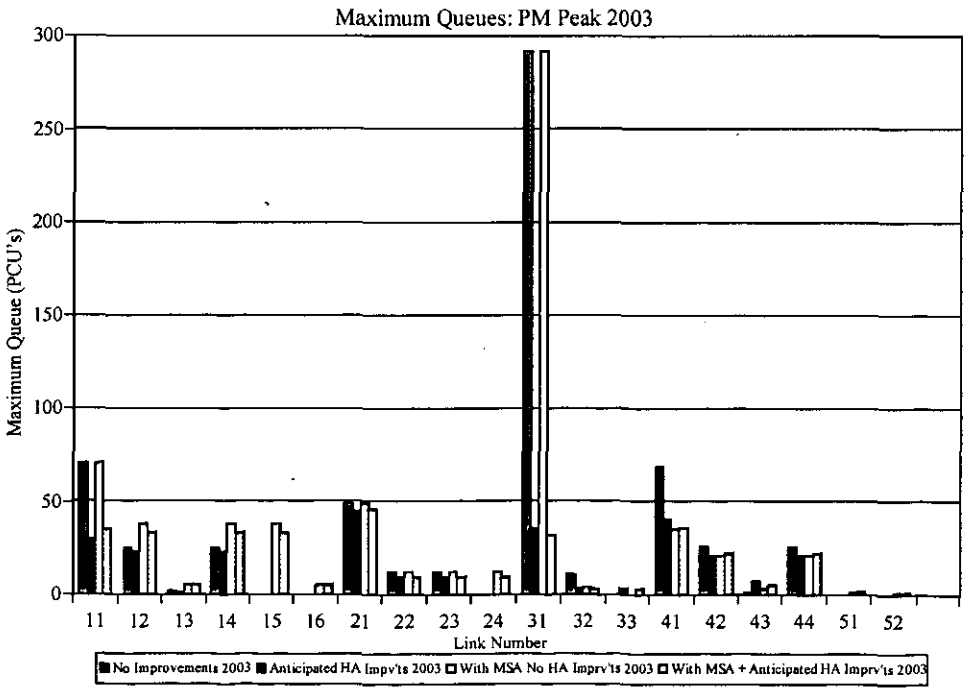


Figure 9-13: Degree of Saturation & Queues PM Peak 2003 – Comparison of HA Scheme 2 improvements "With" and "Without" MSA

10. OFF-SITE REMEDIAL MEASURES

10 OFF-SITE REMEDIAL MEASURES

10.1 Providing for the MSA

10.1.1 The access/ egress to the proposed MSA is located at the south of the junction. The facility will not attract new traffic but will draw from a redistribution of existing users. As a consequence the proposals cater for traffic attracted to the MSA without detriment to the associated junction. This would be achieved by providing dedicated lanes that will allow access/ egress to the MSA with a limited requirement for traffic to influence the circulatory carriageway of the main roundabout.

10.1.2 This would be achieved by providing traffic wishing to use the MSA with dedicated lanes that would provide:

- A dedicated merge linking the M4 Westbound off-slip with the proposed MSA;
- A dedicated merge linking the MSA egress with the M4 westbound on-slip;
- A new MSA egress only with the southern circulatory carriageway of the roundabout providing for onward travel to the A404(M) and the A308(M);
- Improved slip road merges and diverges with the Westbound M4.

10.1.3 The proposed highway improvements are shown on Drawing No. 339945/P/108/SK6.

10.1.4 Construction of the additional lanes will result in:

- widening of existing road embankments
- replacement of existing road drainage
- widening of the existing road pavement
- revision of some existing traffic signal equipment and lighting columns
- relocation of safety fencing

10.1.5 Where feasible it is proposed to leave in place as much of the existing traffic signal installation as practicable.

10.1.6 Information traffic signs would be erected on both carriageways of the M4, with safety fence protection provided where required.

10.1.7 The junction currently has street lighting and the improvements would require the relocation of a number of the light columns in addition to new columns for the MSA access and egress.

11. CONCLUSIONS

11 CONCLUSIONS

11.1.1 This report has presented an assessment of the traffic impact of the proposed MSA at Junction 8/9 on the M4.

11.1.2 The assessment has taken into account the potential for Highway Agency's proposals for improvements to the junction and associated works at various levels, although the scale of this improvement is unspecified at this time.

11.1.3 The off-site highway works to off-set the impact of through-traffic diverted to the proposed MSA from the M4 and altered circulating movements for traffic already using the roundabout have been designed using robust traffic figures. This has been achieved by using a turn-in rate which does not reflect the fall off in value during peak periods, the use of NRTF Central growth rates and the fact that the turn-in rate has been applied to all traffic using the roundabout in addition to M4 traffic.

11.1.4 Since the purpose of an MSA is to serve existing users of the motorway network there are no additional trips, only the redistribution in the locality of existing traffic. The off-site works for the MSA cater for this redistribution without detriment to any short, medium or long-term improvements that the Highways Agency may need to provide if they wish to provide an at-grade improvement within the confines of the highway boundary for the benefit of the travelling public.

11.1.5 In addition to providing essential services to travellers at one of the busiest parts of the national motorway network, the TRANSYT analysis demonstrates that as traffic flows build, the proposal will provide some relief during the peak hours. The scale of proposed improvements by the applicant will not compromise the operational life of the junction or influence any works undertaken by the Highway Agency that have been considered in this assessment.

12. APPENDICES

Appendix B

MERGES AND DIVERGES

2000 and 2003 Flows

Based on Average Weekday Flow Feb 2000.
Figures factored for seasonal variation by factor of 1.07 (Road Traffic Statistics 1999).
2000 to 2003 flows derived from NRTF Central Growth.

Merge Flows

Westbound Merge	AM Peak 2000	PM Peak 2000
M4 Westbound (Mainline Flow)	3959	4486
M4 Westbound On-Slip	1299	1265
Westbound Merge	AM Peak 2003	PM Peak 2003
M4 Westbound (Mainline Flow)	4163	4717
M4 Westbound On-Slip	1366	1330

Eastbound Merge	AM Peak 2000	PM Peak 2000
M4 Eastbound (Mainline Flow)	4427	3887
M4 Eastbound On-Slip	2108	1690
Eastbound Merge	AM Peak 2003	PM Peak 2003
M4 Eastbound (Mainline Flow)	4655	4087
M4 Eastbound On-Slip	2217	1777

Diverge Flows

Westbound Diverge	AM Peak 2000	PM Peak 2000
M4 Westbound (Mainline Flow)	3959	4486
M4 Westbound Off-Slip	1797	1932
Westbound Diverge	AM Peak 2003	PM Peak 2003
M4 Westbound (Mainline Flow)	4163	4717
M4 Westbound Off-Slip	1890	2032

Eastbound Diverge	AM Peak 2000	PM Peak 2000
M4 Eastbound (Mainline Flow)	4427	3887
M4 Eastbound Off-Slip	1348	1317
Eastbound Diverge	AM Peak 2003	PM Peak 2003
M4 Eastbound (Mainline Flow)	4655	4087
M4 Eastbound Off-Slip	1418	1385

01/36785

Proposed Westbound Motorway Service Area

Junction 8/9 M4
Maidenhead
Berkshire

RECEIVED
- 5 MAR 2001
R.B.W.M. ASTON HOUSE
D.C. UNIT

APPENDIX 2
Noise and Emissions to Air

BOULEVARD LAND LIMITED
Land and Property Development
Granada

FPDSavills
INTERNATIONAL PROPERTY CONSULTANTS

MAIDENHEAD MOTORWAY SERVICE AREA
ENVIRONMENTAL IMPACT ASSESSMENT - NOISE

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1.0 INTRODUCTION

1.1 A single-sided motorway service area (MSA) has been proposed for the land south of junction 8/9 of the M4 (see Figure 1, Appendix). The scope of this assessment is to predict the possible noise impact that the construction and operation of an MSA at this site could be expected to have on local inhabitants. As this junction is also subject to alteration by the Department of Transports' (DoT) Motorway Widening Unit, this assessment has taken into account existing and proposed road layouts. Noise predictions have been made for one local residence (Cresswells Farm) and for the track/path south of the site, which is used by local inhabitants for recreational purposes. All other habitations/ public areas around the proposed MSA are too distant from the site to perceive the noise created therein as a nuisance.

1.2 Motor vehicles produce noise from tyre contact with the road surface, from engine and transmission vibration. In free flowing traffic, such as on a motorway, tyre contact with the road is the greatest contributor to noise emission per vehicle. In slow moving traffic, and particularly on steep gradients, engine noise becomes the larger contributor. The intensity of the noise generated depends on a number of factors, including speed of vehicle/ engine, type of road surface, and type and weight of vehicle.

1.3 In addition to variations at source, the noise intensity perceived at a location away from the source is dependent on factors which affect it's propagation. These include the distance from the source, the presence of barriers, the absorptive texture of the ground, the height of propagation above the ground, the frequency of the noise, and the field of scope within which the noise is perceived.

1.4 In order that there might be some degree of consistency between noise assessment predictions, the DoT have provided a mathematical model which is to be used as the basis for these assessments. This model, given in the DoT's `Calculation of Road Traffic Noise', has been used in this assessment. The noise level predictions so devised are compared against the criteria which need to be met for entitlement to noise insulation measures under the Noise Insulation Regulations 1975.

1.5 For the inhabitants of Cresswells Farm House and for persons using the track to the south of the proposed site (Location E, see Figure 1, Appendix 1) this assessment has :

- predicted the noise levels arising from the existing road network, ie. the M4 and junction 8/9, for the proposed opening year of the MSA (estimated as 1997);

- predicted the noise levels arising from the existing road network and the proposed MSA in the opening year (1997) (it has been assumed that the proposed changes to the M4 will not be in place by 1997);

- predicted the noise levels arising from the M4 and the proposed motorway changes, but without an MSA, for the year 2012 (the potential worst case year within 15 years of the proposed MSA development due to expected traffic flow increases);

- predicted the noise levels arising from the M4, the proposed motorway changes and the proposed MSA, for the year 2012;

- measured existing noise levels at the proposed MSA site and at an operational MSA of similar design to the proposed MSA at Maidenhead;

- drawn conclusions from the noise predictions and measurements of the likely impact (ie. annoyance) that the proposed road schemes could be expected to have;

- assessed the entitlement to noise insulation provision for habitations close to the scheme.

1.6 Prediction of noise levels has relied on traffic flow forecasts and road scheme drawings from various sources. The future road layout of the M4 has been derived from the DoT's drawing of September 1993, titled "Public consultation drawing - M4 Improvements" (Drawing nos. DTP0201/PH/589). The arrangement of the roads in the proposed MSA and their relation to the local resident and the track/footpath has been derived from Boulevard Land's drawing, dated June 1994 and titled "Proposed Motorway Service Area at Junction 8/9, M4, Maidenhead" (drawing nos. 2085-D2).

1.7 Traffic flow forecasts for year 1997 at Junction 8/9 were derived from a Junction survey of November 1994 carried out for Acer Consultants Ltd. by Technicon Ltd., using a high growth scale factor. Traffic flow forecasts for the year 2012 were derived from a further Acer Consultants traffic study of the year 2015 for the M4 widening scheme; these figures were downgraded to those for the year 2012 using the NRTF figures. Additional information has been derived from landscape survey reports, aerial photography and visits to the site. No account is made in the prediction model of possible affects of the weather, for example, wind is known to be able to either `carry' or `mask' noise propagation. The wind rose for Kew (West London), published by the Meteorological Office, is shown on Figure 1 (Appendix 1). It can be seen that the prevailing wind in this region is a south-south westerly for both summer and winter, tending to carry noise generated from within the proposed MSA away from Cresswells Farm.

1.8 A noise survey has also been carried out at Cherwell Valley MSA (between the 21st and 25th of March 1995) which is of similar dimensions and topography to the proposed MSA at Maidenhead. The aim of this survey was to provide noise measurements from a fully operational MSA for comparison with the predicted model and to provide noise measurements during the night, which the predictive model does not require.

2.0 REGULATIONS - ROAD TRAFFIC

2.1 This assessment is concerned with the predicted noise impact that the proposed road layout alterations at junction 8/9, M4 could be expected to have on the local inhabitants. Annoyance or health effects that might be suffered by those people either constructing or using the proposed MSA once it is operational, do not fall within the scope of this assessment.

2.2 Under the Noise Insulation Regulations 1975 and the Noise Insulation (Amendment) Regulations 1988, any person whose habitation is close to a proposed change in road layout are entitled to apply for noise insulation provision for their property, provided that :

i) the relevant noise level (RNL) from the new or altered road layout equals or exceeds 68db(A) L_{10} (18 hours) within 15 years after scheme opening; (see Appendix for glossary of terms);

ii) the RNL be at least 1db(A) more than the prevailing noise level ie., before the alteration work began;

iii) the contribution to the increase in the RNL from the new or altered highway must be at least 1db(A).

2.3 BS4142 : 1990 'Method for rating industrial noise affecting mixed residential and industrial areas' provides a method for comparing the average 'proposed' noise source (L_{eq}) with the existing background noise (L_{90}) and using this to assess the liklelihood of complaints from local inhabitants. Where the new noise source exceeds the background level by 10dB(A) or more 'complaints are likely'; if within 5dB(A), the position is described to be 'of marginal significance'; and if below 10dB(A) of background, it 'is a positive indication that complaints are unlikely'.

2.4 It should be remembered that the decibel scale is logarithmic. Doubling the distance of a receptor from a noise source results in a reduction of 3dB(A) if the noise is from a line source eg. road, or of 6dB(A) if from a point source eg. ventilation fan.

3.0 REGULATIONS - CONSTRUCTION

3.1 Although construction work is of a temporary nature, the noise levels produced may well be in excess of those of the background (traffic) noise. In addition to restricting "noisy" work practices to within a normal working day, it may be necessary in some circumstances to restrict certain noisy practices or to provide noise insulation or containment measures to affected buildings, particularly in sensitive areas or where background noise levels were previously low eg., rural settings.

3.2 The requirement for the provision of insulation measures, for reducing noise levels within a building located adjacent to a road construction project, is given in Regulation 5 of the Noise Insulation Regulations 1975. However, these measures are only required where the noise created would seriously effect, and for a "considerable" time, the enjoyment of persons within the eligible building, and where the traffic noise following completion of the construction project would in itself be insufficient to justify insulation. No noise threshold levels are given.

3.3 The Department of the Environment Circular 114/75 however, does stipulate that should the noise level from construction work exceed 70db(A) for lengthy periods each day, insulation measures may be appropriate; and night or weekend work may require a downward revision of this limit. The local environmental health office will need to be consulted as to the schedule of work for those processes that can be anticipated to create the greatest noise.

3.4 Cresswells Farm House (see Figure 1, Appendix) is close (~60m) to the proposed MSA boundary and is likely to be affected by construction site noise.

4.0 NOISE PREDICTIONS

4.1 The residential property closest to the proposed MSA (Cresswells Farm House), and thus the most likely to be affected, is the only property for which an environmental noise impact assessment has been carried out. Additional residences have not been considered because they are either too distant from the proposed MSA to perceive the noise created therein and/or they are closer to the M4 than the MSA site. The road layout of the proposed MSA and its' relation to Cresswells Farm is shown in Figure 1 (Appendix 1).

4.2 Traffic flows on the M4, on junction 8/9 and inside the proposed MSA have also been used to predict noise incident on the track/footpath south of the site. Location E was used as the reference point (see Figure 1, Appendix 1) because it is the closest point to the internal road network of the proposed MSA, and particularly to the heavy duty vehicle (HDV) park and sloping egress road.

4.3 The noise levels at these two sites (Cresswell Farm House and Location E) has been predicted for the years 1997 (opening year) and 2012 (expected worst case year within 15 years of the opening year). These predictions (given in Table 1, below), take into account the presence or otherwise of the proposed MSA and proposed road changes to the M4.

4.4 Predicted noise levels are given at first floor level (4m height) for Cresswells Farm House and 2m for Location E, expressed as L_{10} (18 hours) figures (see Appendix 8 for glossary of terms). The 18 hours considered for the predictions is from 06.00 to 24.00.

4.5 The prediction model requires a determination of the intensity of the noise source, the so-called basic noise level, onto which is applied a number of correction factors; accounting for variations of road surface, vehicle type and speed, gradient of road, distance to receptor, intervening topography (including barriers) and the angle of view of the noise source (ie. road) at the reception point. For comparison purposes, these predictions have been calculated using MSA perimeter barrier heights of 2 and 4 metres (comprising earth mounding and/or solid fencing).

Table 1 : Predicted Noise levels for the year 2012 with and without MSA Development at junction 8/9, M4.

Location of predicted incident noise	MSA development	Predicted Noise Level dB(A) L_{10} (18 hours)	
		Opening Year (1997)*	Worst Case Year (2012)**
Cresswell Farm House (at 1st floor level, ie.4m)	No MSA	62.7	63.3
	MSA with 2m high perimeter banking	63.6	64.2
	MSA with 4m high perimeter banking	63.1	63.8
Location E on track south of site (at height of person, ie. 2m)	No MSA	59.5	61.1
	MSA with 2m high perimeter banking	61.1	61.5
	MSA with 4m high perimeter banking	56.7	57.6
L_{10} (18 hour) value which must be equalled or exceeded for entitlement to noise insulation provision		68	

* Proposed M4 improvements for junction 8/9 not in place.

** Proposed M4 improvements for junction 8/9 in place.

4.6 A number of simplifying assumptions have had to be made in these predictions, mainly due to the lack of information of the proposed road schemes. These assumptions were :

- that all road surfaces are of the impervious bituminous type, with a texture depth of 2 mm;
- traffic using the M4, the junction and the MSA has been assumed to be 15% HDV's;
- all traffic on the M4 travels at 112 km/h (70mph); on M4 slip roads at 96 km/h (60mph); on the roundabout at junction 8/9 and on roads within the MSA at 50 km/h (30mph).
- traffic flow into the MSA has assumed an 7.5% 'turn-in' rate of passing traffic;

- noise barriers other than the embankment of junction 8/9 and the proposed perimeter banking of the MSA (ie. all internal plantings of the MSA, and all hedges, trees, and out-buildings at Cresswells Farm) have not been considered in the calculations (**these would serve to decrease noise levels incident at Cresswells Farm and Location E**).

4.7 If the proposed MSA were to be surrounded by a screen of 4m in height, the predictions show that (see Table 1 above), to the nearest decibel, incident traffic noise at Cresswells Farm House would be unaffected by the MSA development. Although traffic would come much closer to the Farm House if the proposed MSA were to be developed, the screening around the site would not only absorb/deflect the noise created from this source, it would also significantly reduce the noise created on the M4 west of junction 8/9.

4.8 The predicted L_{10} (18 hour) value at Cresswells Farm House would be increased by the requisite 1db(A) for noise insulation provision only if the perimeter screen of the proposed MSA were to be of 2m height or less. This could be the case for a vegetation screen, which could take 3-5 years to properly develop. However, whilst this increase would satisfy two of the criteria laid down for entitlement to noise insulation provision (see paragraph 2.2), the overall L_{10} (18 hour) value is below the 68db(A) L_{10} (18 hour) threshold and hence the residents of Cresswells Farm will not be entitled to noise insulation provision under the terms of the Noise Insulation Regulations 1975.

4.9 The noise level predictions demonstrate that an MSA with a 4m high surrounding barrier would actually have the effect of reducing the L_{10} (18 hour) value for the track/footpath south of the proposed site (see Table 1 above). Although MSA traffic would pass within 40m of this path, the most significant noise at this location will still be from the M4 and junction 8/9 and hence the presence of the MSA noise barriers would actually reduce the noise incident at this location from this source.

4.10 In the calculation for 1997, it has been assumed that the M4 widening programme proposed by the DoT will not have occurred; hence traffic flow forecasts have been based on the existing road scheme. Conversely, for the year 2012, it has been assumed that these proposed changes will have been completed; hence, traffic flow forecasts have taken into account the re-direction of some of the westbound motorway traffic away from the present raised roundabout, carrying it in a cutting along the M4 before being redirected north.

4.11 There is no reliable method for predicting construction noise due to the inherent variability in construction processes. Although only of a temporary nature (< 12 months) construction processes and equipment use (eg. heavy vehicle movements both in and around the site) are processes liable to cause greatest concern to local residents. Construction site noise sources would be mitigated to some degree by the ambient noise of the M4. However, certain short-lived intense noises are likely to be audible above the ambient background at locations distant to the MSA site.

4.12 Considering the relatively small distances between the nearby residence (Cresswells Farm) and the proposed southern MSA site (less than 100m), the high intensity noise from construction machinery could be perceived as a nuisance, particularly during adverse weather conditions, eg. when the wind blows from the direction of the site towards the residence. Where possible, all necessary measures will be taken to control noise at source, eg. by using silencing systems. Also, processes which are particularly noisy will be carried out at times of the day which are least noise sensitive; liaison with the Local Environmental Health officers will be required.

5.0 NOISE SURVEY

5.1 The DoT's predictive model has been used to assess the noise levels which could be expected to occur around the proposed MSA at Maidenhead, but from traffic movement alone. Other possible sources of noise, for example, ventilation fans, compressor motors, people, etc. can not be incorporated into this model. Hence, noise monitoring surveys were undertaken, to :

- determine the overall background noise, including any tonal components, from sources within an operational MSA;
- establish the existing background noise at the proposed MSA site at Maidenhead;
- assess whether an operational MSA at Maidenhead could be perceived as a nuisance by local inhabitants and other persons who may use the nearby footpaths for recreational purposes.

5.2 Noise monitoring was undertaken at Cherwell Valley MSA (Junction 10, M40) between 21 and 25 March 1995. This MSA was chosen because:

- it is presently fully operational;
- its design (road layout, topography and building structure) closely resembles the proposed MSA, particularly, it is a single sided site;
- it is in a rural area, free from extraneous noise sources.

5.3 Four noise monitoring locations were chosen in and around the Cherwell Valley MSA (see Figure 2, Appendix 2). Location A was approximately 10m from the edge of the exit road. The exit road at this MSA is on a slope which closely resembles that on the proposed exit road at the Maidenhead site. This was important, as vehicles, particularly lorries, are known to create more noise going uphill.

5.4 Location B was 10m from the HDV exit road. Location C was 1m from the window of a 1st floor room in the MSA Lodge, located adjacent to the car park. Location D was adjacent to the loading bay of the Amenity Building, which is the site of the air conditioning systems and the waste compactor (although the latter was shielded by a 3m slatted wooden fence).

5.5 Lack of access prevented any of the monitoring stations at Cherwell Valley MSA from directly representing the orientation of Cresswells Farm House to the roads of the proposed Maidenhead site; although Location A was 10m from the MSA access/egress roads, whereas it is proposed that Cresswells Farm House will be approximately 120m from these similar roads. If the measured L_{eq} values for Location A at Cherwell Valley are extrapolated to that which could be expected at Cresswells Farm House (Table 4, Appendix 6) the values are within 1dB(A) or less than the prevailing (L_{90}) background noise. Hence, in accordance with BS4142, an operational MSA at the site proposed is likely to be `of marginal significance' in relation to the noise impact at Cresswells Farm House.

5.6 The average intensity of noise created is directly related to the volume of traffic present. Traffic flow counts carried out at Cherwell Valley MSA in October/November of 1994 demonstrated that the daily flow of traffic into the MSA was approximately 8,000 - 10,000 vehicles. The daily traffic flow figures used in the noise predictions for Maidenhead were based on 10,400 vehicles in 1997 and 12,000 in the year 2012. Hence, the noise monitoring at the Cherwell Valley MSA should closely approximate that which could be expected from a similar site at Maidenhead.

5.7 The results of the noise monitoring at Cherwell Valley MSA are given in Table 2 (Appendix 3). The results are given as L_{10} (1hr) and L_{90} (1hr) values with the dB(A) weighting. The arithmetic mean of L_{10} (1hr) values between 06.00 and 24.00 gives the L_{10} (18 hour) figure required for determining entitlement to noise insulation provision.

5.8 Location A (by the exit road from the MSA) was the only monitoring station to record more than one L_{10} (1 hour) value above 68db(A) - the L_{10} (18 hour) noise entitlement threshold. However, even at this location, the L_{10} (18 hour) value was 1db(A) less than this threshold.

5.9 The only other location to record an L_{10} value above 68db(A) was Location D (amenity building). This was due to a tanker lorry parking within 5m of the microphone to re-supply the MSA's natural gas tanks; a procedure which took approximately half an hour.

5.10 Although not required by the DoT's Environmental Impact Assessment, noise monitoring was carried out overnight at each of the monitoring stations described. As would be expected, noise levels during this period (24.00 to 06.00) were very much lower than day time values at all of the monitoring stations.

5.11 The only persistent noise of tonal, or near tonal, quality which could be perceived during the day at Cherwell Valley MSA was the motors and fans of the amenity building's refrigeration plant, situated on the ground within the service yard and perceptible as a low 'hum'. Octave band analysis measurements, taken 5m from these units, produced noticeable peaks in the lower frequency bands (see Table 3, Appendix 5) with an overall Noise Rating of 60 (derived from Noise Rating curves).

5.12 The noise from the refrigeration plant was not perceptible at a distance of 5m outside the service yard, with octave band analysis at this location giving a Noise Rating to 55. This Noise Rating would have been much lower, were it not for a direct line of sight of the M40 motorway at this location, with it's particular noise component around 1,000Hz now dominating. In all other directions, the refrigeration plant could not be perceived beyond approximately 30m, primarily due to the effect of increasing distance from source, but also due to the 3m high wooden fence which surrounds the service yard.

5.13 During the night, when the background noise from the M40 motorway and other sources are greatly reduced, the intermittent operation of compressor motors on refrigerated HDVs could be perceived, but only from within the site. The noise from these units could not be perceived beyond the site due to the intervening 3-4m of earth mounding which surround the site. At the proposed Maidenhead MSA site, the Amenity Building and HDV parking areas are at least 250m from Cresswells Farm House. Applying distance attenuation to these point sources, it is clear that these persistent tonal noise components would not be perceived at Cresswells Farm House, either during the day or at night.

5.14 A noise monitoring survey, including octave band analysis, was also carried out at the proposed Maidenhead MSA, in order to establish the existing background noise levels. The results of this survey are given in Table 4 (Appendix 6). Measurements were taken close to Cresswells Farm and on the public footpath which runs close to the boundary of the proposed MSA site (Location E on Figure 1, Appendix 1), during the afternoon and night of 1 June 1995. The wind during the survey was slight (>2m/s) and in a West-Northwest direction.

5.15 Noise measurements were taken in mid-afternoon, during the traffic rush hour (17.00-18.00) and after midnight. At all of these times, traffic flow on the M4 and on junction 8/9 was the primary contributor to perceived noise, this being confirmed by the Noise Rating plots which had near identical shapes for all measurements (results in Table 3, Appendix 5). Noise Ratings ranged from 55 to 65, with lowest figures at night and mid-afternoon and higher values during the rush hour when traffic levels were greatest.

5.16 The L_{90} value is the noise level exceeded for 90% of the time and as this excludes transient loud intensity noises, eg. passing jet aircraft, it is an accurate indicator of background noise. The L_{90} values measured close to Cresswells Farm ranged between 51.8 and 60.3 dB(A) (Table 3, Appendix 5). At similar times of the day, the L_{90} values at Location A at Cherwell Valley (Table 2, Appendix 3), ranged between 50.5 and 64.0 dB(A). Hence, the background noise measured at Cherwell Valley was actually lower than at Cresswells Farm at night, but was higher during the day.

5.17 Location A was, however, only 10m from the up-slope exit road, whereas Cresswells Farm House will be approximately 120m from the nearest proposed MSA road. Also, the site lines between the vehicles using the exit road and Location A were uninterrupted, whereas earth mounding and vegetation screens are proposed between the MSA and Cresswells Farm House, in addition to the screening effect provided by existing farm buildings. Hence, it can be expected that the presence of an operational MSA at the site proposed will not be perceived at Cresswells Farm House above the already high background noise from the M4 and junction 8/9.

5.18 L_{90} values for the track/footpath close to the southern boundary of the proposed MSA site were similar to those recorded near Cresswells Farm House, despite there being a 3m high mature hedge between this location and the M4. Due the close proximity of this path to the proposed MSA roads (approximately 35m at the closest point), it is unlikely that the proposed earth and vegetation screens will prevent all noise generated from within the MSA from being perceived at this location. However, as has been demonstrated in the predictive model above, the background noise at this location is expected to decrease overall due to the significant effect of the MSA noise barriers on noise generated on the M4.

5.19 All noise measurements were taken using equipment and techniques specified in BS7445 "Description and Measurement of Environmental Noise". The equipment used is listed in Appendix 7.

6.0 CONCLUSIONS

6.1 Based on the Department of Transports' method for calculating road traffic noise and with a 3 metre high mound surrounding the site, the MSA proposed for Junction 8/9 of the M4 would be expected to increase the incident noise at Cresswells Farm House by 0.5dB(A) or less, for the opening year and within 15 years of the opening year.

6.2 This property would not be entitled to noise insulation provision however, as the levels predicted are still well below the threshold value given in the Noise Insulation Regulations 1975. With the persistent background traffic noise from the M4 and from Junction 8/9 predominating and without any noises with tonal characteristics audible beyond the site, it is unlikely that the inhabitants of Cresswells Farm House will perceive the additional noise created by an operational MSA at the site proposed. This is in part attributable to the fact that the barrier enclosing the MSA would not only act to shield Cresswells Farm House from noise created within the MSA, but also from the M4 west of junction 8/9.

6.3 Noise predictions for the track/footpath south of the proposed site demonstrated that even in the location closest to the MSA roads and to the expected loudest sources of noise, the HDV park and the egress gradient, the presence of an MSA would actually result in reducing the background noise in this location, provided the MSA is surrounded by a 3m high barrier. This is primarily attributable to the effect this barrier would have on the noise generated by the M4 and junction 8/9, the predominating noise sources present. Hence, the presence of an MSA at the proposed site is very unlikely to have a detrimental noise impact on persons using the footpath for recreational purposes.

6.4 The greatest environmental noise impact from the MSA, is likely to be that during the construction process. All reasonable steps will be taken to ensure that the noise created from the construction process is kept to a minimum and is carried out at times of the day which are least likely to cause annoyance - the local environmental health office will be consulted for advice on this matter.

APPENDIX 1

Figure 1 Locations at the proposed MSA at Maidenhead for which a noise impact assessment has been carried out in the present study.

Note: Wind directions should be similar to Kew.

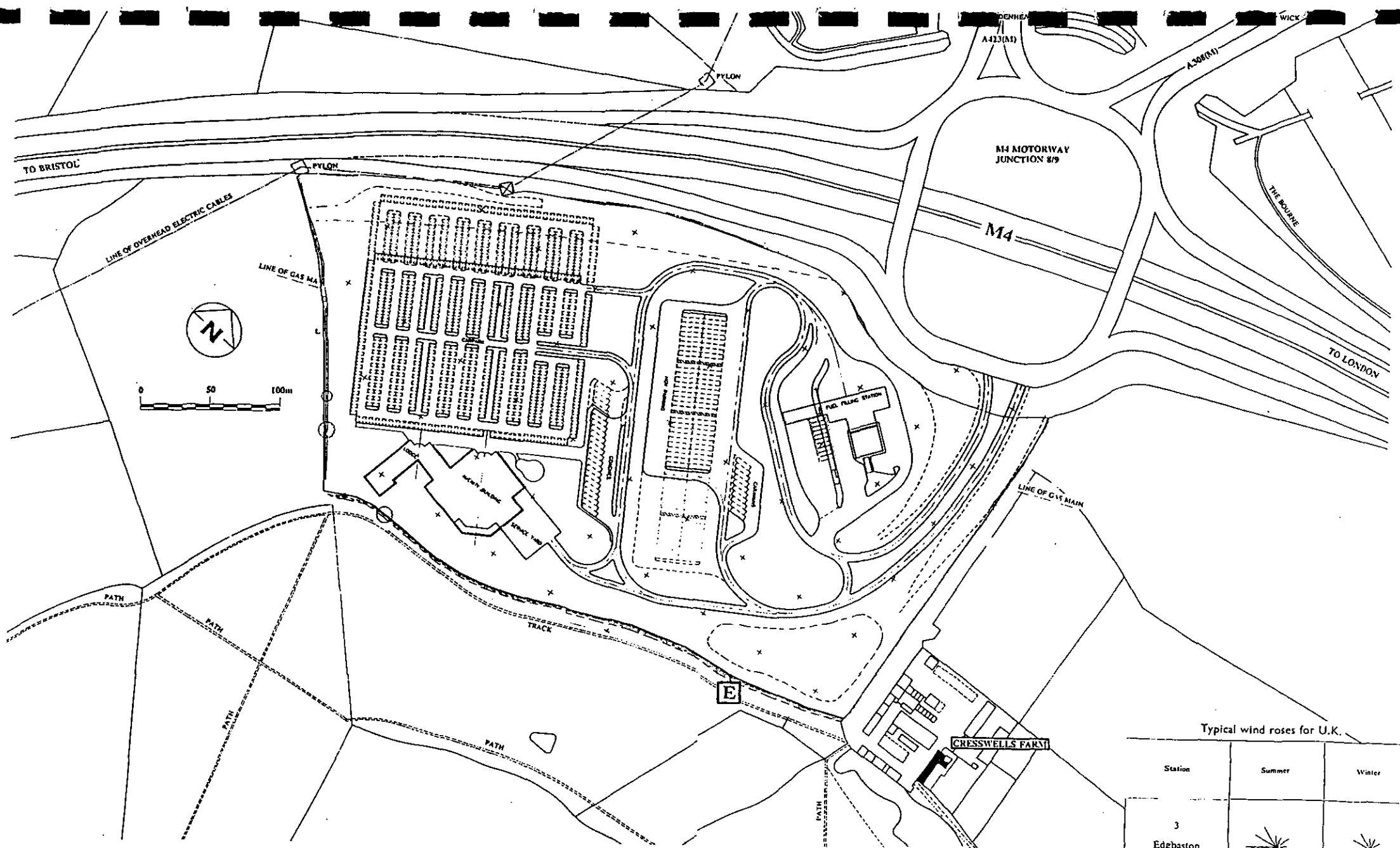


Figure 1 Plan of proposed motorway service area at junction 8/9, M4. Noise levels from all motor vehicles predicted for Cresswells Farm House (shaded) and the track/footpath (location E).

APPENDIX 2

Figure 2 Locations of noise monitoring stations Cherwell Valley MSA, junction 10, M40.

Note: Wind directions should be similar to Edgbaston.

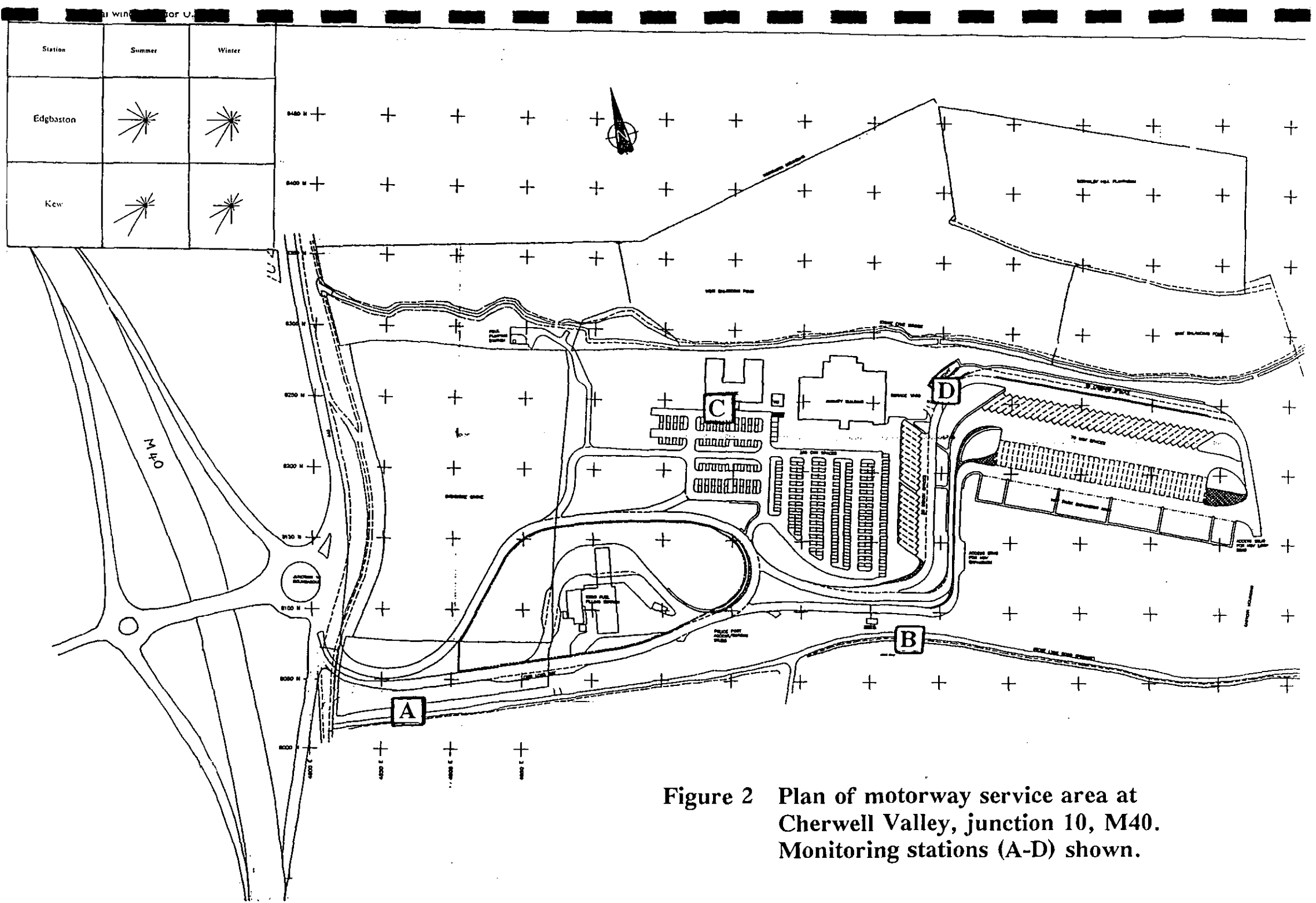


Figure 2 Plan of motorway service area at Cherwell Valley, junction 10, M40. Monitoring stations (A-D) shown.

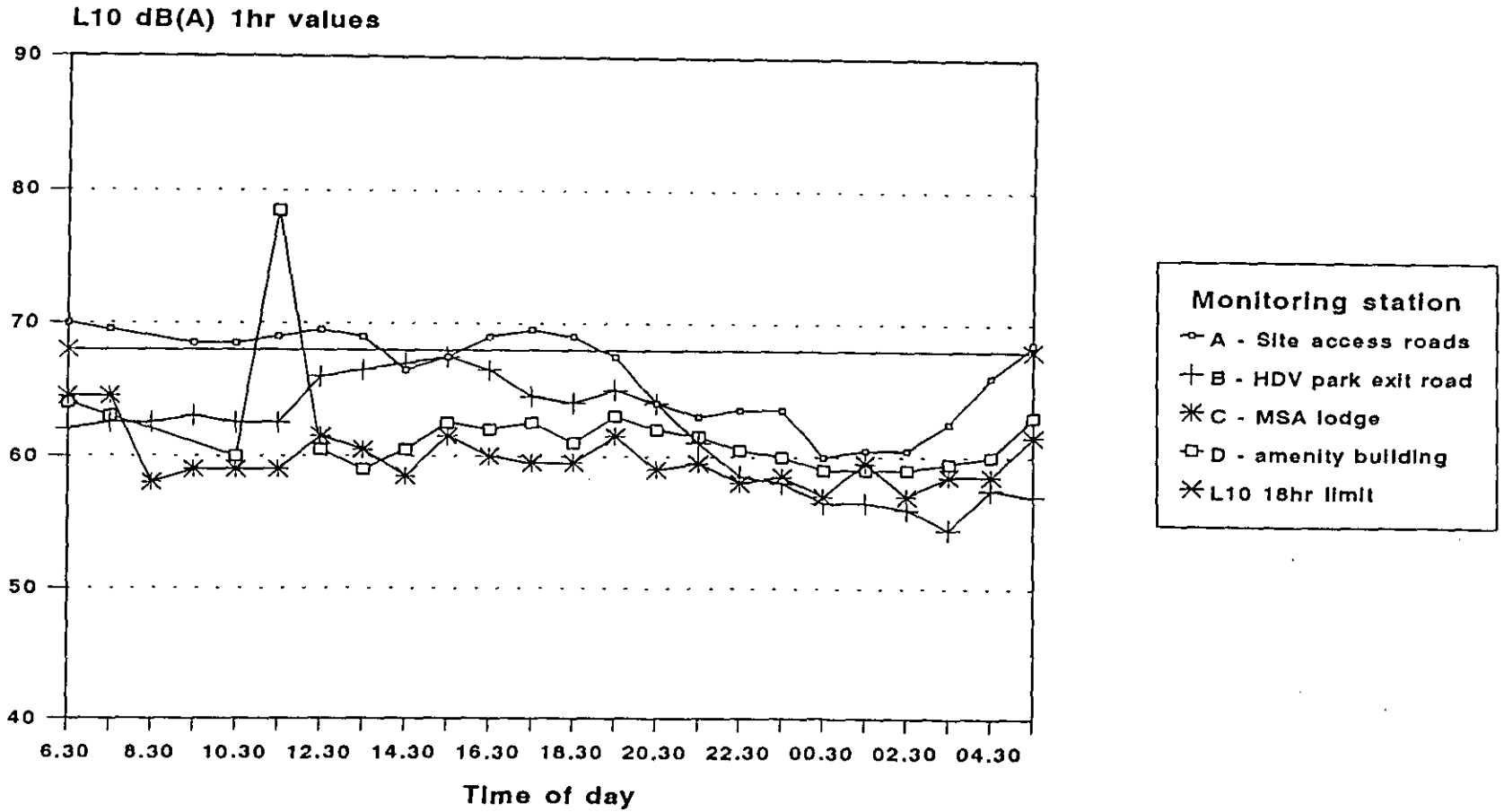
APPENDIX 3 Table 2 : Noise measurement results from monitoring stations at Cherwell Valley MSA, J.10, M40.

{PRIVATE }Time.	L_{10} dB(A) (1hr) measured values				L_{90} dB(A) (1hr) measured values			
Location	A	B	C	D	A	B	C	D
Height	3m	3m	4m	2m	3m	3m	4m	2m
06.00 - 07.00	70.0	62.0	64.5	64.0	64.0	52.5	61.0	60.0
07.00 - 08.00	69.5	62.5	64.5	63.0	62.0	55.0	61.0	55.0
08.00 - 09.00	-	62.5	59.0	-	-	55.5	53.5	-
09.00 - 10.00	68.5	63.0	59.0	-	61.0	59.0	52.0	-
10.00 - 11.00	68.5	62.5	-	60.0	62.0	58.0	-	51.5
11.00 - 12.00	69.0	62.5	59.0	78.5	61.0	57.0	52.5	54.0
12.00 - 13.00	69.5	66.0	61.5	60.5	62.0	58.0	53.5	51.5
13.00 - 14.00	69.0	66.5	60.5	59.0	61.5	58.0	53.5	52.0
14.00 - 15.00	66.5	67.0	58.5	60.5	58.5	58.0	53.0	52.5
15.00 - 16.00	67.5	67.5	61.5	62.5	60.0	58.0	54.5	53.5
16.00 - 17.00	69.0	66.5	60.0	62.0	63.0	59.0	55.0	53.0
17.00 - 18.00	69.5	64.5	59.5	62.5	64.0	58.0	55.0	54.5
18.00 - 19.00	69.0	64.0	59.5	61.0	64.0	59.0	54.5	55.0
19.00 - 20.00	67.5	65.0	61.5	63.0	60.5	59.0	55.5	56.0
20.00 - 21.00	64.0	64.0	59.0	62.0	58.0	58.5	55.0	54.5
21.00 - 22.00	63.0	61.0	59.5	61.5	56.5	57.0	55.0	54.0
22.00 - 23.00	63.5	58.5	58.0	60.5	56.0	54.5	52.5	54.5
23.00 - 24.00	63.5	58.0	58.5	60.0	53.5	53.0	52.5	51.5
24.00 - 01.00	60.0	56.5	57.0	59.0	50.5	51.0	50.0	50.0
01.00 - 02.00	60.5	56.5	59.5	59.0	51.0	51.0	49.5	50.0
02.00 - 03.00	60.5	56.0	57.0	59.0	51.0	48.5	48.0	49.0
03.00 - 04.00	62.5	54.5	58.5	59.5	54.0	48.0	49.5	51.0
04.00 - 05.00	66.0	57.5	58.5	60.0	57.5	49.0	52.5	51.5
05.00 - 06.00	68.5	57.0	61.5	63.0	62.0	50.0	54.0	57.5

MAIDENHEAD MOTORWAY SERVICE AREA

ENVIRONMENTAL IMPACT ASSESSMENT - NOISE

APPENDIX 4 Figure 3 : L_{10} (1hr) noise measurements at various locations within and around Cherwell Valley MSA, M40.



Sound level meter used : Bruel & Kjaer 2231
Survey carried out : 21-25 March 1995

MAIDENHEAD MOTORWAY SERVICE AREA

ENVIRONMENTAL IMPACT ASSESSMENT - NOISE

APPENDIX 5 Table 3 : Noise measurements and Noise Ratings at proposed Maidenhead MSA site and Cherwell Valley MSA.

Location	Proposed Maidenhead MSA						Cherwell Valley MSA		
	E - footpath south of proposed site			F - near Cresswells Farm			5m from plant (service yard)	5m from service yard	10m from fuel filling station
Time	15.20-15.35	17.45-18.00	00.10-00.25	14.50-15.05	17.20-17.35	00.35-00.50	16.00-16.15	16.30-16.45	16.50-17.15
L_{90} dB(A)	55.3	58.8	52.8	53.8	60.3	51.8	60.8	51.3	55.3
L_{10} dB(A)	59.3	61.8	57.8	58.8	63.3	56.8	62.3	55.3	63.3
L_{eq} dB(A)	57.4	60.4	55.8	56.7	61.8	54.9	61.7	53.7	60.0
Octave band analysis - mid-octave band frequency in Hz, sound pressure levels in dB									
31.5	59	64	51	62	64	52	68	63	72
63	60	67	55	63	66	53	74	62	73
125	56	61	49	59	60	50	71	52	66
250	43	48	40	44	49	40	61	45	53
500	51	52	45	46	52	48	58	49	54
1 k	56	60	51	50	61	53	54	50	56
2 k	48	51	44	45	51	44	47	41	49
4 k	30	36	24	35	38	27	43	34	44
8 k	19	19	12	20	22	14	35	24	31
Noise Rating	60	65	55	55	65	55	60	55	60

APPENDIX 6

Table 4 : Noise measurements and predictions for establishing potential noise impact of operational MSA on inhabitants of Cresswells Farm House (near proposed Maidenhead MSA).

Location of measurement / Time of measurement		Noise Level dB(A)		
		14.00-15.00	17.00-18.00	00.00-01.00
Existing L_{90} Cresswells Farm House (120m from proposed Maidenhead MSA access roads)		53.8	60.3	51.8
Existing L_{eq} Location A (10m from access roads of Cherwell Valley MSA)		65.2	67.4	58.1
Predicted L_{eq} Location A at increasing distance from MSA access roads	20m	62.2	64.4	55.1
	40m	59.2	61.4	52.1
	80m	56.2	58.4	49.1
	160m	53.2	55.4	46.1

APPENDIX 7

NOISE SURVEY EQUIPMENT

A4.1 The following Bruel and Kjaer acoustic measurement instrumentation was used.

- Modular Precision Sound Level Meter Type 2231
- $^1/_2$ inch Condenser Microphone Type 4165
- Sound Level Calibrator Type 4230
- Statistical Analysis Module Type BZ 7101
- Microphone wind shield

A4.2 The calibration of the sound level meter was checked against a known noise source before and after each set of measurements and did not require re-calibration throughout the survey.

- Calibration Level 93.8dB

APPENDIX 8

GLOSSARY OF TERMS

dB(A) The noise level in decibels after applying the A-weighting; this weighting is a series of correcting factors applied across a range of frequencies to make the sound level measured more closely represent the response of the human ear. An increase of 10 dB(A) is equivalent to a perceived doubling in the loudness of the sound.

L_{90} This is the dB(A) level exceeded for 90% of the time. It is a good indicator of background noise as it excludes transient peaks in sound, for example from passing aircraft. However, it is not widely used in the legislation.

L_{eq} This is the equivalent continuous sound level and can be considered as the steady noise which would have the same total A-weighted acoustic energy as the real fluctuating noise measured over the same period of time.

L_{10} This is the dB(A) level exceeded for 10% of the time and as it has been shown to be a good indicator of traffic noise intrusion, it is widely used in legislative requirements concerning traffic sources.

01/36785

Proposed Westbound Motorway Service Area

Junction 8/9 M4
Maidenhead
Berkshire

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APPENDIX 3
Ecology and Nature Conservation

BOULEVARD LAND LIMITED
Land and Property Development
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INTERNATIONAL PROPERTY CONSULTANTS

ECOLOGY
PROPOSED MSA, JUNCTION 8/9, M4 MOTORWAY
MAIDENHEAD

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1. Nature Conservation Designations and Principal Habitat Features
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Appendices:

A. Species List for Cresswell Farm Fields

B. Species Recorded On and Around the Site

ECOLOGY
PROPOSED MSA, JUNCTION 8/9, M4 MOTORWAY
MAIDENHEAD

1 Background

1.1 The following ecological assessment is the result of winter, spring and summer visits to the proposed sites and its surroundings, a phase 1 habitat survey, a desk study of existing information and planning policies.

2 Site Description

2.1 The site is a single field on a seasonally waterlogged, ground water gley soil, derived from river terrace gravel and Tertiary clays. It is currently improved grassland used for the production of turf. The vegetation is therefore dominated by a very limited range of grass cultivars. There were signs of mole burrows in places, and also of extensive rabbit grazing around the field edges.

2.2 The site has hedgerows to three sides (south, west and east). These are predominately of hawthorn, with some hazel and a few mature oak trees. Dogwood, blackthorn, elder, ash and field maple are also present in the general area. The boundary to the south of the site is formed by a hedge with ditch. The ditch is to the south side of the hedge and was flowing eastwards during winter and spring.

2.3 The hedge bottoms are species poor and dominated by coarse species such as cleavers and nettle. Such a plant community is indicative of high nutrient levels and other agricultural influences, and is typical of such intensively farmed areas of lowland Britain. Many lengths of hedgerow are extensively burrowed by rabbits. The hedges are all tall, sparse and rather gappy at the base, especially along the western boundary, and provide relatively poor breeding habitat for small birds. Only a few common birds such as blue tit and robin were recorded during surveys.

2.4 The motorway roundabout embankment at the northern eastern corner of the site supports a matrix of recent habitats. There is some open grassland, including a few marshy patches with sedges, and areas of dense bramble and scrub, the latter the result of the motorway landscape planting of hawthorn, rose, blackthorn, birch and hazel. The proportion of open habitat appears to be declining as bramble spreads and the shrub species mature and extend their cover. The shrub provides a thicket of dense cover which is likely to attract common birds. The open grassland is quite rich in common wildflower species and the southerly aspect and the shelter offered by scrub encourages some local invertebrate interest. The embankment is very heavily burrowed by rabbits.

2.5 Some areas of more open scrub on the western parts of the embankment support woodland plants including primrose, dog violet and wood spurge, in addition to the more ubiquitous species of shaded areas such as ground ivy and cuckoo pint. As this is artificial 'made ground' of approximately 30 years of age, these 'woodland indicators' raise questions of origin. It seems likely that woodland topsoil excavated during motorway construction was re-used here.

3 Evaluation

3.1 The proposed site itself is of extremely low nature conservation importance, with some very local interest confined to the motorway junction embankment and the surrounding hedgerows.

3.2 No rare or protected species are known to be present on the site.

4 Protective Designations

4.1 The proposals would not affect any statutory nature conservation site. The nearest Site of Special Scientific Interest is Great Thrift Wood, some 900 metres to the west on the other side of the M4 motorway (Figure 1).

4.2 Whilst the application site is not designated, there are two nearby Wildlife Heritage Sites (WHS) identified by Berkshire, Buckinghamshire and Oxfordshire Naturalists' Trust (BBONT). The Berkshire Nature Conservation Forum has co-ordinated these non-statutory designations which are included in the Local Plan.

4.3 The Royal Borough of Windsor and Maidenhead Local Plan (Adopted July 1999) includes Policy N9 which states:

In considering development proposals affecting local nature reserves and Wildlife Heritage Sites, the Council will have particular regard to the need to protect natural features and the availability of mitigation measures. Measures will be required to safeguard and enhance Wildlife Heritage Sites included within any development proposals.

4.4 The two nearby WHSs here are numbered as SU 87 Z01 and SU 87 Y01, shown on the map in Figure 1. Consultation has revealed that SU 87 Z01 was initially composed of 3 parcels of land, but that one was deleted following a field survey by BBONT members in 1991, when it was found that one field had been agriculturally improved. The two remaining parcels of WHS land are adjacent to the application site, to the south and west. The western field is location of the proposed nature conservation area.

4.5 Data held for SU 87 Z01 reveals high quality mesotrophic grassland. The species list includes several reliable indicators of unimproved dry damp grassland, including meadow thistle, sneezewort, pepper saxifrage, and others typical of marshy areas, probably related to the margins of the pond within the field to the south. In all, there are 11 species considered to be of high interest in a County context.

4.6 The fields which comprise SU 87 Z01 were inspected briefly during the site survey. The vegetation appeared to be of somewhat limited interest, and the field to the south in particular appeared to have been agriculturally improved. The field to the west of the site has recently been used for turf production. It seems that the interest noted by BBONT in 19991 has dwindled or been subsequently lost as a result of agricultural production.

4.7 WHS SU 87 Y01 lies to the south east, some 250 metres from the application site and would not be adversely affected by the proposed MSA development.

5 Impact of the Proposals

5.1 The proposals will predominantly affect the agriculturally improved field that is used for turf production, and which is of no significant nature conservation value.

5.2 The hedgerows on three sides of the site will remain and would not be directly affected by the proposals. The scheme includes additional landscape planting measures which will reinforce the structure and variety of the hedgerows, increasing their nature conservation value, particularly for common birds.

5.3 The new access from the motorway junction will affect a part of the recent scrub and grassland habitat which has developed on the embankment and which has a local value for wildlife. However, the habitat is entirely artificial and the losses could easily be replaced by reproducing the matrix of habitats in the landscape scheme for the new embankments which would be created. The areas which support interesting woodland plants are largely avoided by the development.

5.4 While some nearby fields may have local to County nature conservation interest, the development is not considered to present any direct threat. Indirect impacts through hydrological effects or through changes to the management of agricultural land are thought most unlikely to be significant. It seems that the nature conservation interest of the adjacent fields has already been lost through agricultural operations in any case.

6 Mitigation and Opportunities for Positive Improvements

6.1 The scheme offers opportunities for the enhancement of the wildlife value of the area through the design of landscape planting and choice of species. The following aspects have been considered:

- Trees and shrubs (woodland/ structure planting);
- Peripheral grassland treatments.

6.2 The landscape scheme for the new access road from the motorway roundabout would be designed to provide replacement and extended habitats for the communities displaced from the existing embankment. This could be achieved through the provision of a matrix of native scrub and tree planting, combined with more open grassland areas which would be sown with suitable mixtures of native grasses and wildflowers. The selection of plant species would be made with the nectar and larval foodplant requirements of local butterflies and other insects in mind.

6.3 Away from the more formal areas, wildlife interest will be enhanced through the use of locally native trees and shrubs in the planting scheme. The basic framework will be based on the following;

Acer campestre	Field maple
Corylus avellana	Hazel
Crataegus monogyna	Hawthorn
Fraxinus excelsior	Ash
Prunus spinosa	Blackthorn
Quercus robur	English oak

6.4 Other species that will be used in smaller numbers include;

Ilex aquifolium	Holly
Prunus avium	Wild Cherry
Rosa spp.	Wild rose
Sambucus nigra	Elder
Viburnum opulus	Guelder rose

6.5 These would be planted in single species groups of 7 or 9 plants, with a convoluted inner boundary to the design in order to maximise the length of interface between the developing woodland and adjacent grassland.

6.6 There are particular opportunities for habitat creation along the hedgerows around the edges of the site. The screening provided by the hedgerow will be extended and widened, while the planting design will have a secondary wildlife benefit. The inner edges of the planting will be scalloped to provide sheltered bays of grassland and 'edge' habitat, ideal for invertebrates. The 'bays' will be of varying size (5 to 20 metre diameter approx.) and aspect (NW through to SSE).

6.7 The peripheral grassland areas of the site would be designed to enhance the wildlife habitats and to integrate with the structure/woodland planting to provide sheltered areas and a considerable length of 'edge' habitat.

6.8 The native species to be used in these areas would include a selection from the following meadow plants, known local specialities, and plants which are widespread and useful for insects:

Grasses

Agrostis capillaris	Common bent
Alopecurus pratensis	Meadow foxtail
Anthoxanthum odoratum	Sweet vernal grass
Cynosurus cristatus	Crested dog's-tail
Poa trivialis	Rough meadow-grass

Wildflowers

Achillea millefolium	Yarrow
Centaurea nigra	Common knapweed
Daucus carota	Wild carrot
Galium verum	Ladies bedstraw
Lathyrus pratensis	Meadow vetchling
Leucanthemum vulgare	Ox eye daisy
Lotus corniculatus	Birdsfoot trefoil
Plantago lanceolata	Ribwort plantain
Primula veris	Cowslip
Prunella vulgaris	Self-heal
Ranunculus acris	Meadow buttercup
Rumex acetosa	Sorrel
Succissa pratensis	Devilsbit

6.9 The following uncommon species are recorded from the area. If locally sourced seed was available, this could be added to the mix in small quantities;

Achillea ptarmica	Sneezewort
Cirsium dissectum	Meadow thistle
Senecio erucifolius	Hoary ragwort
Silaum silaus	Pepper saxifrage
Stachys officinalis	Betony

7 Residual Impacts and Conclusions

7.1 In conclusion, the site is intensively farmed land with no rare, protected or unusual wildlife species or communities. The predictions are that there will be no significant impact on wildlife and that nature conservation is unlikely to be a major issue. The proposals have the potential to provide some positive benefits for wildlife.

NATURE CONSERVATION AREA - OUTLINE MANAGEMENT PLAN

1. Nature Conservation Management Plan

1.1. Location

Site Name: Cresswell Farm Field

Site Status	NNR	SSSI	LNR	Other	County	District
	No	No	No	WHS	Berkshire	Windsor and Maidenhead

Local Planning Authority: Royal Borough of Windsor and Maidenhead

Grid Reference: SU882781

AONB: No

National Park: No

Area	Ha	Acres	O.S. Maps	1:50,000	1:10,000
	4	10		175	SU87NE

Date Notified (if SSSI)	1949 Act	1981 Act	EN Region
	-	-	

1.2. Tenure

	Lease	NRA	Purchase	s.15 agreement	Ownership (name/address)
Holding Area					
Date of agreement					
Duration					

Contact	Manager/Warden	None

Rights of access	None	Byelaws	None

2. Conservation Status

2.1. Site description

A single field surrounded on three sides by mature hedgerows, part of an area of typical lowland farmland. To the north is the M4 motorway.

The soils are of low permeability and typically seasonally waterlogged and are derived from river terrace gravel and tertiary clays.

The field is currently used for the production of lawn turf, but was previously noted as being unimproved mesotrophic grassland with a rich flora (BBONT 1991). At this time the field, along with some nearby land, was listed as a county Wildlife Heritage Site (SU 87 ZO1).

The hedgerows are of mixed native shrub species, mostly hawthorn and hazel, with some hedgerow ash and oak trees.

2.2. Evaluation Against 'Nature Conservation Review' Criteria

Size A small area of some 4 hectares.

Diversity Low diversity sown vegetation, with boundary hedgerows also of low to moderate diversity.

Naturalness The hedgerows are of native species, but the field vegetation comprises horticultural cultivars of typical turf grasses.

Rarity No threatened or rare species or communities are present.

Fragility The habitats are relatively stable.

Typicalness A representative piece of lowland farmland, typical of the area and indeed a wide part of lowland England.

Recorded History Other than lists of plant species from BBONT in 1991, no records were found.

Ecological Position Two previously interesting fields of similar type are nearby. One has been agriculturally improved, while the other, some 500 metres to the south east, retains a little of its former interest though it too seems to have been subjected to a degree of agricultural improvement.

Potential There is considerable potential for increasing the nature conservation value of the site through management of existing hedgerows and creation of appropriate grassland and wetland habitats.

Intrinsic appeal Presently limited access, but once established could be made available to users of adjacent public footpath. Proximity of M4 limits amenity at present, though screening is proposed.

2.3. Identification/confirmation of important features

Site Features	Importance		
	National	Regional	Local
1. Habitat types - hedgerows			Average

2.4. Ideal Management Objectives

- Management of hedgerows to maintain optimum ecological and stockproof condition.
- Development of new wildlife habitats on areas of turf grassland, to include native broad-leaved woodland, species-rich meadows, and wetland.
- Increase controlled public access to the site to allow amenity usage.

2.5. Rationale

Should the project proceed, there will be opportunity for the development of an interesting and valuable wildlife reserve. The area is sufficiently robust to permit increased public usage, and the site is very suitable for the habitat creation measures proposed. In particular, several years' turf production will have helped to reduce soil fertility and diminish the weed seed bank in the soil. The creation of new species rich grassland should therefore be relatively straightforward.

In the short to medium term the creation of interesting grasslands and wetland is likely to produce a rapid increase in the nature conservation and amenity value of the site. This will persist in the longer term, when there will be the additional benefit offered by the developing broad-leaved woodland planted to bolster the boundary hedgerows and to screen the motorway.

2.6. Identification of operational objectives, selection of management options and outline prescriptions.

Operational objective	Management option	Outline prescription
To maintain and create open water and associated wetland	Habitat management option 3 Active management (A3)	1. Draw up detailed plan for the creation of new balancing pond with the requirements of wildlife as a major consideration. Design 'dry' element of balancing as part of wider grassland habitat.
To create new areas of woodland	Habitat management option 2 Limited intervention (A2)	1. Draw up planting plans for the planting out of new woodland areas along existing hedgerows and between the field and the motorway, using a mixture of locally native broad-leaved trees and shrubs. 2. Maintain new plantings as necessary until established.
To create new areas of species-rich meadow	Habitat management option 3 Active management (A3)	1. Prepare ground for sowing with grass and wildflower seed mix. 2. Sow with a specified mix of grass and wildflowers which are locally native to the area and which would flourish under a haymeadow management regime. Supplement this with locally produced hay if available from semi-improved WHS field. 3. Manage by cutting on an annual basis, to provide a hay crop and, if possible, aftermath grazing.
To encourage community use for informal recreation	Access policy option 3 Partially open access (E3)	1. Provide a link between the adjacent public footpath and parts of the field, particularly the pond area.

3. Prescription

3.1. Project register

The standard codes and descriptions for management operations are given for reference, followed by brief descriptions of the proposed projects.

Woodland

MH01/01 *Manage woodland by planting/sowing.*

New woodland will be established through tree and shrub planting in the area shown on the plan, largely based around existing hedgerows. Planting will be of locally native species. A typical mix would be;

Acer campestre	Field maple	10%
Corylus avellana	Hazel	10%
Crataegus monogyna	Hawthorn	30%
Fraxinus excelsior	Ash	5%
Prunus spinosa	Blackthorn	20%
Quercus robur	English oak	5%
Ilex aquifolium	Holly	5%
Rosa spp.	Wild rose	5%
Sambucus nigra	Elder	5%
Viburnum opulus	Guelder rose	5%

These will be planted as transplants (2m centres) and whips (3m centres) in single species groups of 7 or 9 plants, with a convoluted inner boundary to the design in order to maximise the length of interface between the developing woodland and the adjacent grassland or wetland. The edges of the planting will be scalloped to provide sheltered bays of grassland and 'edge' habitat, ideal for invertebrates. The 'bays' will be of varying size (5 to 20m diameter approx.) and aspect (NNW through to SSW).

The planting would take place in the first autumn/winter/spring available, using best available shelter and fencing materials. Standard maintenance and removal of failures would be undertaken until established.

Open Water

MH61/01 *Manage open water by excavation.*
MH62/01 *Manage open water by plant introduction.*

Part of the field will be used for the construction of a balancing lake. This will be integrated into the habitat creation exercise and have an important secondary nature conservation function. While most of its area will be dry except during times of heavy rain, part will be overdeepened so that it forms a permanent lake. Planting of trees and shrubs will be avoided on the pond's southern side to avoid shading and accumulation of excess leaf material.

The edges of the dry balancing area will be very shallowly shelving. It will be developed and managed as part of the haymeadow, though it is thought that its lower lying nature and the occasional temporary inundation will encourage the development of a slightly different vegetation, providing further diversity to the wildlife reserve.

The permanent lake will also be designed with the requirements of wildlife in mind. The shoreline will be convoluted and the edges gently shelving to permit access and egress by amphibians and waterfowl. Native aquatic plants will be introduced in small quantities to encourage rapid colonisation by wildlife. Such plants are likely to include:

Epilobium hirsutum	Great willow-herb
Iris pseudacorus	Yellow iris
Phalaris arundinacea	Reed canary-grass
Sparganium erectum	Branched bur-reed

Meadow

MH10/01	*Manage grassland by controlled grazing*
MH12/01	*Manage grassland by mowing*
MH13/01	*Manage grassland by sowing/planting/turf laying*

The field (including the dry balancing area) will be ploughed in late summer and a good seed bed prepared. Preliminary operations (non-persistent herbicide application) may be necessary to treat any pernicious weeds that germinate, though this is unlikely to be a major problem due to the previous use of the field for turf production. The field would then be sown in the autumn with a proprietary or purpose designed grass and wildflower mixture at a rate of 4g/m^2. Management would involve a number (perhaps 2 or 3) of cuts in the first year after sowing, followed in subsequent years by a hay crop. The detailed design of the edge of the meadow would integrate with the structure/woodland planting to provide sheltered areas and a considerable length of 'edge' habitat.

The species to be used will include the following, a selection of appropriate meadow plants, known local specialities, and plants which are widespread and useful for insects:

Grasses

Agrostis capillaris	Common bent
Alopecurus pratensis	Meadow foxtail
Anthoxanthum odoratum	Sweet vernal grass
Cynosurus cristatus	Crested dog's-tail
Poa trivialis	Rough meadow-grass

Wildflowers

Achillea millefolium	Yarrow
Centaurea nigra	Common knapweed
Daucus carota	Wild carrot
Galium verum	Ladies bedstraw
Lathyrus pratensis	Meadow vetchling
Leucanthemum vulgare	Ox eye daisy
Lotus corniculatus	Birdsfoot trefoil
Plantago lanceolata	Ribwort plantain
Primula veris	Cowslip
Prunella vulgaris	Self-heal
Ranunculus acris	Meadow buttercup
Rumex acetosa	Sorrel
Succissa pratensis	Devilsbit

The following uncommon species are recorded from the area and may have occurred on the field prior to its improvement for agriculture. If locally sourced seed is available, this will be added to the mix in small quantities;

Achillea ptarmica	Sneezewort
Cirsium dissectum	Meadow thistle
Senecio erucifolius	Hoary ragwort
Silaum silaus	Pepper saxifrage
Stachys officinalis	Betony

The mix will be supplemented by seed derived from local hay crops if suitable donor sites are available (for instance the remaining semi-improved field included in the Wildlife Heritage Site).

Management once established will be an annual hay crop, followed if possible and desirable (depending on the condition of the vegetation and growth rates) by aftermath grazing by stock.

Interpretation/visitor guidance/education

ME70/01 *Equip site, by providing/maintaining rides/paths*

A footpath link will be provided from the public right of way that lies to the south of the field. This will be maintained so that local walkers can gain access to the lake shoreline for informal recreational purposes.

RF00/01	*Collect data, vegetation*
RA20/01	*Collect data, herptiles*
RA50/01	*Collect data, Odonata*
RA70/01	*Collect data, other/general insects*

The establishment and ongoing management of the wildlife reserve will provide an excellent educational opportunity. Practical conservation work can be combined with ongoing monitoring to check the effects of actions on the development of the vegetation in the woodland, meadow and lake, and also the natural colonisation by animals.

3.2. Work programme

It is not possible to produce a detailed 5 year work programme until the fate of the project is decided. However, in general, it is proposed that the collection of data and habitat creation works would be undertaken as soon as possible following the start of the scheme, with lake creation, tree planting, and the conversion of the field to haymeadow in year 1.

4. Nature Reserve : Estimated Capital and Maintenance Costs

The following estimates are for the setting up and ongoing (annual) maintenance of the *proposed wildlife reserve in conjunction with the construction of a motorway service area* on adjacent land at junction 8/9 of the M4.

The costs have been calculated for the works as proposed in the management plan, for the field to the west of the motorway service area development. The costs do not include the earthworks for the balancing lake, as nature conservation is considered a secondary benefit.

The estimates should be regarded as approximate and the following points should be borne in mind:

- Professional fees are included as appropriate;
- All labour costs are calculated at full price, some jobs may be undertaken by volunteer groups at lower cost;
- Meadow establishment has been costed from commercial seed; use of hay from a local source may lower costs, depending on the distance that the hay would need to be transported;
- No allowance has been made in the maintenance budget for any income; after the first few years, some might be expected from hay and grazing.

	Capital £	Maintenance £
Hedgerows and Woodland		
Fees and supervision	800	
1.2 ha woodland planting & establishment	4000	150
Rabbit-proof fencing	11000	50
Lake		
Supervision and detailed design	500	
Water plants	250	
Meadows		
Fees and Supervision	1500	
Preparation of site	500	
Sowing of site	200	
Seed costs, 2.7 ha @ 40kg/ha	4000	
Maintenance		500
Estate Work		
Fees	500	
Paths, stile, etc	2000	250
TOTAL	£25250	£950

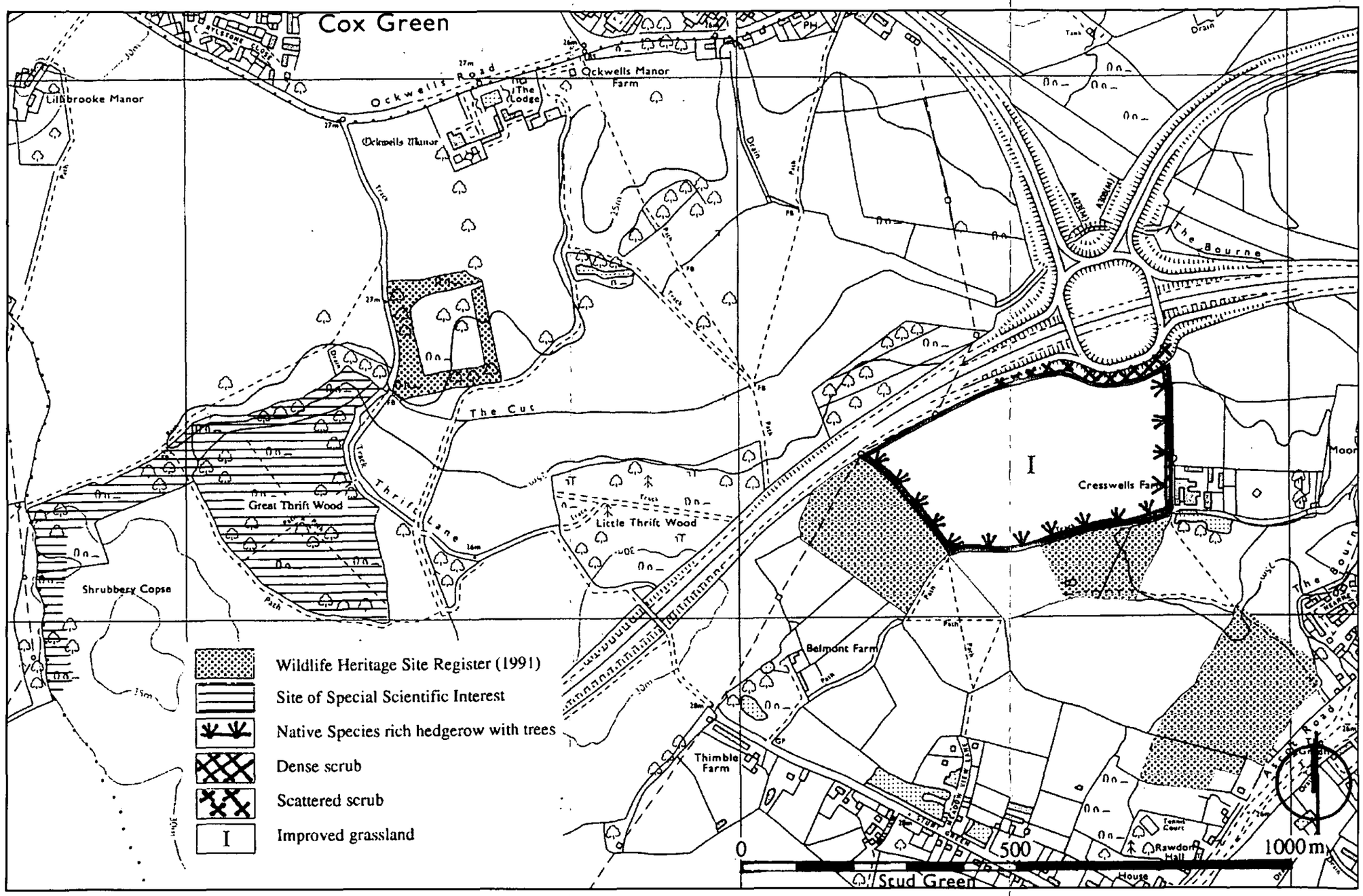

Figure 1: Nature Conservation Designation and Principal Habitat Features

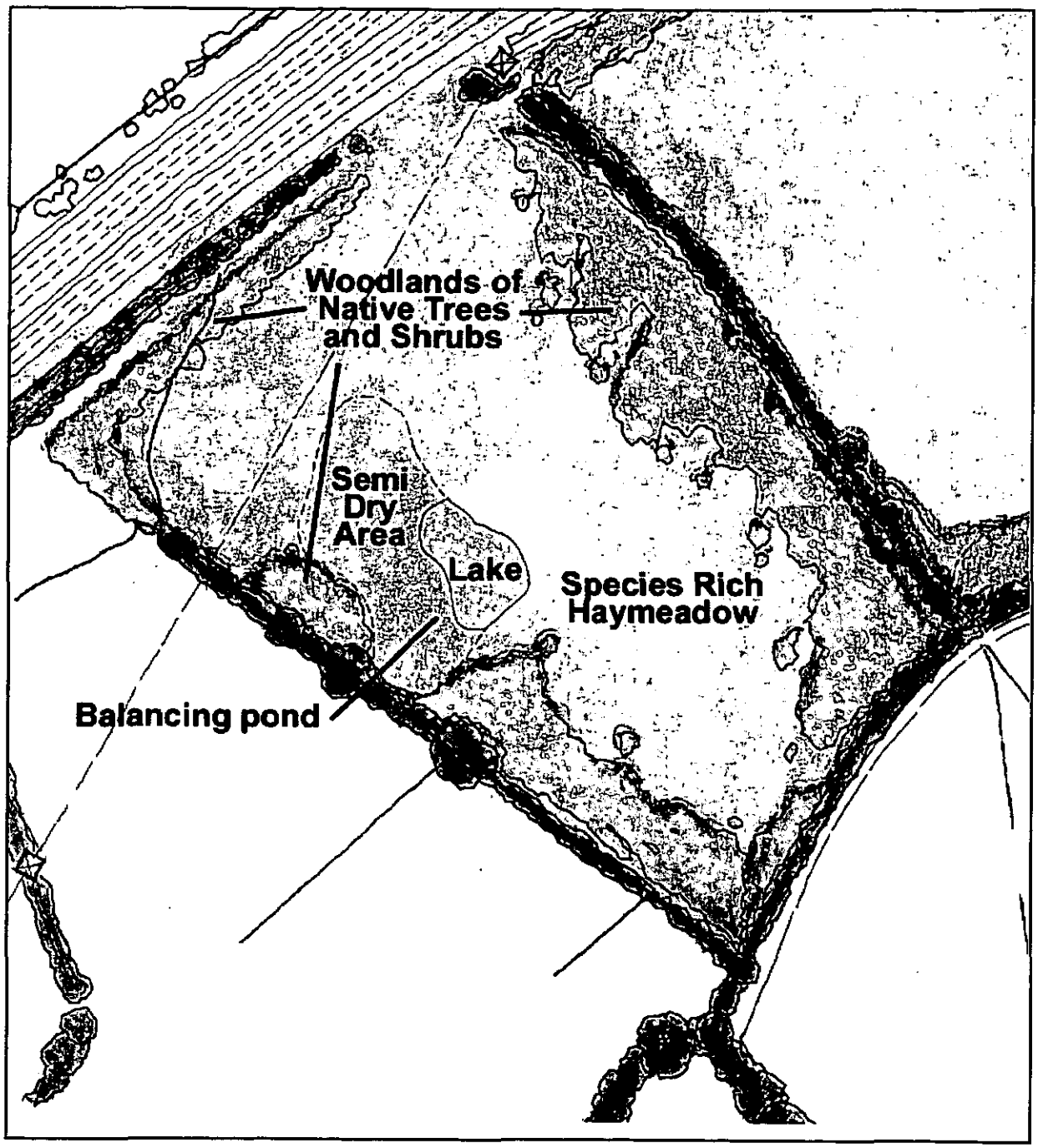

Figure 2: Nature Conservation Area Desired Habitat State

Appendix A

Acer campestre	Field maple
Achillea millefolium	Yarrow
Achillea ptarmica	Sneezewort
Agrostis canina	Velvet bent
Agrostis capillaris	Common bent
Alisma plantago-aquatica	Common water-plantain
Alopecurus geniculatus	Marsh foxtail
Alopecurus pratensis	Meadow foxtail
Anthoxanthum odoratum	Sweet vernal-grass
Arctium minus	Burdock
Bromus hordeaceus	Soft-brome
Calystegia sepium	Great bindweed
Cardamine pratensis	Ladies smock
• *Carex disticha*	Brown sedge
Carex flacca	Glaucous sedge
Carex hirta	Hairy sedge
• *Carex nigra*	Common sedge
• *Carex ovalis*	Oval sedge
Centaurea nigra	Common knapweed
Cerastium fontanum	Common mouse-ear
Cirsium arvense	Creeping thistle
• *Cirsium dissectum*	Meadow thistle
Cirsium palustre	Marsh thistle
Cirsium vulgare	Spear thistle
Cornus sanguinea	Dogwood
Corylus avellana	Hazel
Crataegus monogyna	Hawthorn
Cynosurus cristatus	Crested Dogstail
Dactylis glomerata	Cocksfoot
Daucus carota	Wild carrot
Deschampsia cespitosa	Tufted hair-grass
Epilobium hirsutum	Great willow-herb
Festuca rubra	Creeping fescue
Filipendula ulmaria	Meadowsweet
Fraxinus excelsior	Ash
Galium aparine	Cleavers
Galium palustre	Marsh bedstraw
Galium verum	Ladies bedstraw
Geranium dissectum	Cut-leaved cranesbill
Glyceria declinata	Small flote-grass
Glyceria fluitans	Floating sweet-grass
Hedera helix	Ivy
Holcus lanatus	Yorkshire fog
Holcus mollis	Creeping soft-grass
• *Hordeum secalinum*	Meadow barley
Hypochaeris radicata	Common catsear
Juncus acutiflorus	Sharp-flowered rush
Juncus articulatus	Jointed rush

Juncus conglomeratus	Compact rush
Juncus effusus	Soft rush
Juncus inflexus	Hard rush
Lathyrus pratensis	Meadow vetchling
Lolium perenne	Perennial ryegrass
Lotus uliginosus	Large Birds-foot trefoil
• *Lychnis flos-cuculi*	Ragged robin
Lycopus europaeus	Gipsywort
• *Lysimachia nummularia*	Creeping Jenny
Mentha aquatica	Water mint
Myosoton aquaticum	Water chickweed
Phleum pratense	Timothy
Plantago lanceolata	Ribwort plantain
Plantago major	Greater plantain
Poa trivialis	Rough meadow-grass
Potentilla anserina	Silverweed
Potentilla reptans	Creeping cinquefoil
Prunella vulgaris	Self-heal
Prunus spinosa	Blackthorn
Pteridium aqilinum	Bracken
Pulicaria dysenterica	Fleabane
Quercus robur	English oak
Ranunculus acris	Meadow buttercup
Ranunculus flammula	Lesser spearwort
Ranunculus repens	Creeping buttercup
Rorippa palustris	Marsh yellow-cress
Rubus fruticosus	Bramble
Rumex acetosa	Sorrel
Rumex conglomeratus	Clustered dock
Rumex crispus	Curled dock
Salix cinerea	Grey sallow
Sambucus nigra	Elder
Senecio aquaticus	Marsh ragwort
• *Senecio erucifolius*	Hoary ragwort
• *Silaum silaus*	Pepper saxifrage
Sinapsis arvensis	Charlock
Solanum dulcamara	Woody nightshade
• *Stachys officinalis*	Betony
Stachys sylvatica	Hedge woundwort
Stellaria graminea	Lesser stitchwort
Stellaria holostea	Greater stitchwort
Succisa pratensis	Devils-bit scabious
Tamus communis	Black bryony
Trifolium dubium	Lesser yellow trefoil
Trifolium pratense	Red clover
Trifolium repens	White clover
Ulmus procera	Common elm
Urtica dioica	Nettle
Veronica beccabunga	Brooklime
Vicia cracca	Tufted vetch

(• Species considered to be of interest)

Appendix B

Species Recorded On and Around the Site During Visits.

Trees and shrubs in hedgerows around site:

Acer campestre	Field maple	f
Corylus avellana	Hazel	o
Crataegus monogyna	Hawthorn	a
Prunus spinosa	Blackthorn	a
Quercus robur	English oak	o
Sambucus nigra	Elder	f

Understorey of hedgerows:

Arum maculatum	Cuckoo pint	r
Cirsium arvense	Creeping thistle	o
Galium aparine	Cleavers	a
Glechoma hederacea	Ground ivy	f
Lamium album	White dead-nettle	o
Rubus fruticosus	Bramble	f
Urtica dioica	Nettle	a

Relative abundance within the vegetation community present is indicated by the DAFOR scale:

d dominant a abundant f frequent o occasional r rare

Mole	*Talpa europaea*
Rabbit	*Oryctolagus cuniculus*
Blue tit	*Parus caeruleus*
Great tit	*Parus major*
Green woodpecker	*Picus viridis*
Magpie	*Pica pica*
Mallard	*Anas platyrhynchos*
Robin	*Erithacus rubecula*
Starling	*Sturnus vulgaris*
Wood pigeon	*Columba palumbus*
Wren	*Troglodytes troglodytes*

Scientific Names of Other Species Mentioned in Text

Betula pendula	Birch
Cornus sanguinea	Dogwood
Euphorbia amygdaloides	Wood spurge
Fraxinus excelsior	Ash
Primula vulgaris	Primrose
Rosa spp.	Wild rose
Viola riviniana	Common dog violet

01/36705

Proposed Westbound Motorway Service Area

Juction 8/9 M4
Maidenhead
Berkshire

- 5 MAR 2001
R.B.W.M. - TOWN HOUSE

APPENDIX 4
Archaeology

BOULEVARD LAND LIMITED
Land and Property Development
Granada

FPDSavills
INTERNATIONAL PROPERTY CONSULTANTS

AN ARCHAEOLOGICAL ASSESSMENT OF LAND AT JUNCTION 8/9, M4 MOTORWAY NEAR HOLYPORT, BERKSHIRE

MAY 1995

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D005/95

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APPENDICES

Appendix 1 : Sites and Monuments Record Information

Appendix 2 : Conservation Area Statement for Holyport
(Holyport Conservation Area (A3 Plan))

Appendix 3 : Listed Building Descriptions for Cresswells Farm

PLANS

Plan CPM 1 : Sites and Monuments Record Information
(CPM 1161/01 3/95 RC/CB)

Plan CPM 2 : Air Photographic Information
(CPM 1161/03 3/95 RC/CB)

Plan CPM 3 : 1st Edition OS Map
(CPM 1161/02 3/95 RC/CB)

SUMMARY

Archaeological assessment has confirmed that a single Sites and Monuments Record is listed within the study area (SMR 2306). This consists of a group of stones found in a gas pipe trench in 1963. There is very little information concerning this discovery and it is possible that the stones are of natural origin and therefore of no archaeological significance.

Air photographs indicate that the site area has a history as grassland. As a result no cropmark features or findspots, that are often discovered during arable cultivation, are recorded. Faint traces of ridge and furrow or field boundaries indicate a long history as farmland. It is possible that the site was farmland belonging to the Philberd family during the medieval period. Prehistoric, Roman and medieval finds are listed from the areas around the site, and it is possible that similar archaeological deposits may exist in the proposed development area.

Cresswells Farm, which was originally known as Philberd's Farm, occupies land immediately to the east of the site area. This area is within the Conservation Area of Holyport and contains two listed buildings.

This concluded that, following detailed examination of the SMR, air photographs and early maps, there is little of archaeological significance recorded for the site.

1.0 INTRODUCTION

1.1 This Archaeological Assessment has been prepared by **Countryside Planning and Management (CPM)** on the instructions of Granada Hospitality Ltd and Boulevard Land Limited. It sets out the results of an archaeological assessment for an area of land south-west of Junction 8/9 of the M4 motorway, near Holyport in Berkshire. Planning proposals consist of a motorway services area. The location of the study area is shown on **Plan CPM 1** .

1.2 The aim of the Archaeological Assessment is to provide a summary of known archaeological information for the area based on existing information. An Archaeological Assessment represents the first stage of pre-planning permission archaeological investigations recommended in PPG16 Archaeology and Planning (DOE 1990). It forms the basis for any further pre-planning permission archaeological work such as field evaluation, should this be appropriate.

2.0 METHODOLOGY

2.1 Archaeological Assessment is principally a desktop exercise. The sources consulted vary but include information in the county Sites and Monuments Record (SMR). Information such as early editions of Ordnance Survey maps, national and local records of air photographs and other local historical records are consulted.

2.2 For the proposed MSA site at Junction 8/9 of the M4 motorway, the main sources consulted include the SMR held by Berkshire County Council. The information available consists of records relating to sites and findspots in the area. Air photographs held by both the County Council and the Royal Commission on the Historical Monuments of England (RCHME) have also been consulted.

2.3 The Berkshire Record Office at Shire Hall, Reading was consulted for further records relating to the area. Information consists of the parish Tithe map and apportionment details, 1st, 2nd and revised edition Ordnance Survey maps and local history books. Archaeology staff at Reading Museum were also contacted.

2.4 In addition, information concerning the Holyport Conservation Area and listed building descriptions for Cresswells Farm were obtained from the Royal Borough of Windsor and Maidenhead.

2.5 A visit was made to the site on 14 February 1995 in order to check current ground conditions and the site topography.

2.6 Archaeological information is presented in Section 4 of this report. The SMR numbers used in the text are those issued by Berkshire County Council. Full sites and monuments details are given in **Appendix CPM 1**. The locations of the archaeological sites and findspots are presented on **Plan CPM 1**. Air photographic information for the general area is given

on **Plan CPM 2**. Further historic information including maps is presented in Section 5 of this report. An extract of the first edition Ordnance Survey map dating to c1880 is presented on **Plan CPM 3**.

2.7 The proposed MSA site occupies land immediately to the west of Holyport Conservation Area. The full Conservation Area Statement is given in **Appendix CPM 2**. Listed building details for Cresswells Farm are given in **Appendix CPM 3**.

3.0 THE STUDY AREA

3.1 The site area comprises agricultural land south–west of Junction 8/9 of the M4 motorway and immediately to the west of the Cresswells Farm buildings. The site area is in the parish of Bray and the nearest village is Holyport.

3.2 The Soils

3.2.1 The site area consists mainly of soils of the Wickham 4 association, and comprise of drift over tertiary clays. The southern area of the site may also contain soils of the Hurst association. These consist of coarse and fine loams over river terrace gravels. The eastern part of the site boarders on soils of the Sutton 2 association and consist of loamy soils over river terrace gravels.

3.3 Site Visit

3.3.1 A visit was made to the site in order to assess present conditions. The entire area is currently grassland, although parts of the site have been stripped for grass turf. No archaeological finds were visible in the area stripped of turf. Although site conditions were poor, slight traces of ridge and furrow or old field boundaries were visible. These were almost undetectable as they are substancially ploughed or levelled out.

3.3.2 The north eastern section of the site gradually slopes down towards the M4 motorway, and beyond to the canalised stream known as The Cut. At the time of the site visit the ground surface was waterlogged in places.

3.4 The Conservation Area of Holyport

3.4.1 The Conservation Area of Holyport extends to include the Cresswells Farm buildings and land to the north and south of the farm (see **Appendix CPM**

2 for details). The proposed MSA therefore occupies land immediately to the west of the Conservation Area.

3.4.2 It would appear that the Conservation Area extends to include Cresswells Farm because of the listed buildings and trees in the general area. The area does not appear to have important viewpoints across to the village of Holyport.

4.0 ARCHAEOLOGICAL SITES AND MONUMENTS IN THE STUDY AREA

4.1 The information for the area of Cresswells Farm consists of archaeological excavations, cropmark details from air photographs, stray finds, documentary records and information discovered during ground disturbances, such as pipe laying (see **Appendix CPM 1** for full details).

4.2 The site area is in the parish of Bray and the nearest village to Cresswells Farm is Holyport (SMR 449). Holyport (or Horipord) is first recorded in 1220 and there is a Domesday mention (1086 AD) of a road leading from Windsor to Reading which ran close to Holyport. The name Holyport or Horipord may mean "muddy market town". The prefix "Hori" is derived from "Horrig" or muddy, and the suffix "port" possibly refers to a market place. It is likely that the Greens area of Holyport was the market centre.

4.3 There were seven manor houses in the area of the village. These were probably residences for knights or men at arms associated with Windsor Castle. The later prefix of "Holy" may relate to a relationship with the nearby ecclesiastical settlement at Canon Hill.

4.4 During the medieval period Holyport and the surrounding area was under the control of the St Philberd's manor at the northern end of Holyport Street. The dried up moat to this manor is located in the grounds of Lodge Farm. Holyport Street, which led from the mansion was probably the main street in the medieval period. It is likely that the site area was farmland associated with the Philberd manor, as the early name for Cresswells Farm was *Philberd's Farm*.

4.5 Holyport contains a number of 14th – 16th century timber framed buildings. Five are listed in the SMR (449.01 – 449.05). A moated manor house known as Hynden's Manor House is recorded to the north of the village (SMR 450). This was demolished in 1846. The Conservation Area

Statement for Holyport (see **Appendix CPM 2**) provides further information on historic buildings in the village.

4.6 **Archaeology in the Site Area**

4.6.1 The site itself is located in land immediately west of the Cresswells Farm buildings. The farmhouse and stables are Grade II listed buildings (see **Appendix CPM 3** for full details).

4.6.2 There is one site or findspot of uncertain archaeological significance recorded within the proposed development area (SMR 2603). This consists of a series of six large stones recorded in a gas pipe trench by the Maidenhead Archaeological and Historical Society in 1963. The full published account of this find is given in **Appendix CPM 1**. All the stones were about 18" high and are interpreted as having been set upright. No archaeological finds or further information regarding the date or interpretation of the feature are recorded. No records exist in Reading Museum concerning this possible feature. This "site" must therefore be considered as of limited archaeological potential. It is possible that the stones were mistaken for a natural deposit within the sub-soils.

4.6.3 A similar grouping of stones was also recorded by the same amateur group to the west of the site (SMR 2604).

4.7 **Archaeological Sites and Findspots in the Area Around the Site.**

4.7.1 Prehistoric, Roman, Medieval and Post Medieval archaeological deposits are recorded for the area around Cresswells Farm.

4.8 **Prehistoric Archaeology (c10000BC - AD43)**

4.8.1 The earliest recorded archaeological features consist of mesolithic and neolithic deposits. The closest site is located approximately 1km north-

east of the site (SMR 463). A large quantity of flint tools and microliths (small pieces of flint material sometimes used for arrowheads) were discovered in an area close to an ancient reed swamp or lake. This site was excavated by the Maidenhead Archaeological and Historical Society, and is now a scheduled ancient monument. Bronze and Iron Age pottery, together with evidence for Saxon occupation were also recorded (see SMR 464 below).

4.8.2 In an area immediately to the north-east of SMR 463, a further deposit containing late mesolithic and neolithic material was recorded (SMR 467). Archaeological features consisting of a series of pits produced flint tools, as well as neolithic pottery. These deposits were discovered during demolition work at Canon Hill house in the village of Bray Wick. Iron Age pottery was also recorded.

4.8.3 Approximately 1.5km south-west of the site a pit containing possible neolithic pottery and flint fragments was recorded during gas pipeline construction in 1963 (SMR 460).

4.9 Romano-British Archaeology (AD43 - 400AD)

4.9.1 Romano-British archaeological deposits are recorded in the general study area. SMR 867 consists of a Romano-British pot found in the area of Stud Green, approximately 0.5 km south-west of the site area. Several arrowheads made of bone and flint were also found at this findspot. SMR 2618 consists of a Roman urn containing cremated bone found approximately 30 yards from a possible route of a Roman road. This urn was discovered in 1836 and there is no clear evidence for a Roman road in the area.

4.9.2 Further Roman finds suggest a possible settlement or villa site approximately 1km east of the site area (SMR 459). A pit containing

pottery, flint tools, a bronze ear scoop and iron tools was excavated in 1962.

4.9.3 A silver Roman coin dating to the Antoninus period (2nd Century) was discovered in the Stafferton Lodge area of Bray Wick in 1891 (SMR 452). This findspot was located approximately 2 km south-east of the site area.

4.10 **Saxon and Medieval Archaeology (c 400 - 1500AD)**

4.10.1 SMR 464 consists of Saxon settlement evidence associated with the swamp/lake Mesolithic site (SMR 463). Saxon pottery was found in association with a series of wooden stakes driven into a peat deposit. Similar pottery was discovered under a barn at Moor Farm, 0.5km east of the site area (SMR 471).

4.10.2 Saxon and Medieval pottery sherds are also recorded c 1.5km north-west of the site (SMR 2596).

4.10.3 Medieval moated and manorial sites are recorded in the areas around Cresswells Farm (SMRs 450, 451, 456, 462 and 3447). These are believed to have been the residences of knights or men at arms associated with Windsor Castle. The closest site to the proposed development area is SMR 462. Air photographs show the east and south sides of an enclosure (see **Plan CPM 2**). Remains of earthen banks and a trackway are visible. The 1844 Tithe map shows the eastern arm of the moat and the 1st Edition OS map also shows a linear feature that may represent part of the moat (see **Plan CPM 3**). This site is now under the M4 motorway, and is likely to be extensively destroyed.

4.11 **Medieval and Post Medieval Buildings (Post 1500AD)**

4.11.1 Cresswells Farmhouse and the Stables, which are located to the west of the farm building complex are both Grade II listed buildings (see **Appendix**

CPM 3). These buildings date to the 17th century with 18th, 19th and 20th century rebuildings. Both the farmhouse and the stables originally had entrances from the yard area. The farmhouse now has an entrance from the east front of the house. It is therefore unlikely that the setting of Cresswells Farm can be materially affected by the proposed new development.

4.11.2 The following SMRs comprise additional listed buildings within the study area:

SMR 468 Braywick House

SMR 3782 Moor House farmhouse

SMR 3783 1 - 4 Ascott Road

5.0 HISTORIC MAPS AND OTHER RECORDS

5.1 The Berkshire Record Office has been visited and historic maps and other records were consulted. There was little information available for study.

5.2 The original name for Cresswells Farm was Philberd's Farm, indicating that this area of land belonged to the Philberd family. The site area is likely to have been agricultural land associated with the farm.

5.3 The First Edition Ordnance Survey map of c 1880 shows the site area as one large open field (see **Plan CPM 3**). Cresswells Farm is shown as Philberd's Farm with an orchard area immediately to the north of the farm buildings. Trackways boarder the southern and eastern sides of the site area. The site of the Philberd's manor or mansion is also marked on the map.

5.4 The OS map shows a linear feature c 0.25 km north–east of the site area. This is likely to be part of the moated ditch listed as SMR 462.

5.5 The second and revised edition OS maps show little change during the later 19th century and early 20th century.

5.6 A microfilm copy of the 1844 Bray parish Tithe map and apportionment details was studied. This showed no further information for the site area.

5.7 The Victoria County History for Berkshire Vol III (1923) was consulted. This contained very little information for the parish of Bray. The northern end of the hamlet of Holyport is mentioned as containing two farms, Mores Farm (now known as Moor Farm) and Philberd's Farm (now know as Cresswells Farm). The VCH mentions that Old Filberds and Fifefield House were destroyed towards the end of the 19th century (ref: letters of Chas Kerry, 1864).

6.0 AIR PHOTOGRAPHS

6.1 Air photographs held by Berkshire County Council and the RCHME in Swindon have been examined. The RCHME holds vertical air photographic coverage for the site area dating from 1942 until 1970. These air photographs indicate a long history of grassland which is not conducive to cropmark visibility. As a result the air photographs did not reveal any new information for the site area.

6.2 A transcription of air photographic information held by Berkshire County Council is given in **Plan CPM 2**. The most common features in the general area consist of traces of ridge and furrow cultivation and early field boundaries. Fields to the north and south of the site area contain remnants of ridge and furrow cultivation. The air photographs show no similar features within the site area, due to the fact that they are almost entirely ploughed out.

6.3 North-east of the site area SMR 462 is shown as a cropmark / earthwork feature (see **Plan CPM 2**). This is a possible moated site with associated trackway and field boundaries. One arm of this ditch is recorded on the 1st edition OS map. The site is completely destroyed by the M4 motorway.

7.0 ASSESSMENT AND CONCLUSIONS

7.1 This archaeological assessment concludes that the proposed development site contains one known area of possible interest. This consists of SMR 2603, a group of stones discovered in a gas pipe trench. No artefacts were found which could confirm whether the stones were of archaeological origin. At this stage it is considered unlikely that the stones are of major significance.

7.2. Elsewhere on the site there is evidence for a long history of farming activity. Traces of ridge and furrow or field boundaries have been almost completely removed by later farming activities. Historic sources indicate that Cresswells Farm was originally known as Philbert's Farm. Since the medieval period the site area is likely to have been farmland belonging to the Philberds family.

7.3. Land around the site area has a long history of human occupation. Approximately 1.5 km north-east of the site mesolithic and neolithic, as well as later prehistoric deposits have been excavated (eg SMRs 463 and 467). Closer to the site area, there are records of Romano-British finds including a cremation urn (SMR 2618) and a funerary vessel (SMR 867). These discoveries were made within 0.5km of the site area. Evidence of Roman settlement is recorded c 1km east of the site area (SMR459). Air photographic evidence indicates that a medieval moated site was located less than 0.5km north east of the site. This site is now under the M4 motorway.

7.4 The area immediately to the east of the site is included as part of the Holyport Conservation Area due to Cresswells Farm containing two listed buildings and areas of tree screening. The main focus of Holyport and the Conservation Area itself is well to the south-east of the site, and the development proposals should not impinge on the character of the village.

7.5 Although the site itself contains an SMR entry, the current evidence is not enough to consider it of major significance. It would therefore appear that the site has no major archaeological constraints. The site has, however, a recent history as grassland and this has limited the availability of archaeological information. Cropmark information from air photographs and surface finds, often discovered on recently cultivated arable fields, is not available. Within relatively short distances from the site, there is evidence for Romano-British and Medieval settlement, as well as prehistoric deposits.

APPENDIX CPM 1

Sites and Monuments Record Information

A1.0 SITES AND MONUMENTS RECORD INFORMATION

SMR No: 449.00

Nat grid ref: c 489250 177850

Periods: 13th century to Post Medieval

Class: Village

Description: Holyport is first recorded in 1220. A number of C16 and earlier buildings remain within the village, but no church is shown on 1975 OS map. A moated manor house (SMR 450) is just north of village. Also recorded with Holyport:

449.01 C16 century house

449.02 C15–C16 timber framed – Coventry/Goffs/Ivy Cottages

449.03 C15 Hall house – Anne Duel's house

449.04 C14 Hall House – Hamble Cottage

449.05 C15 Holyport House

SMR No: 450

Nat grid ref: E 489460 178130

Site name: Hynden's Manor House

Periods: Medieval – Post Medieval

Class: Manor – moated

Description: a moated manor house was taken down in 1846. The manor house had a chapel (with chimneys) said to be built in 1570 (SMR 450.01). Bequeathed to Oxford University in 1612 by Sir Thomas Bodley.

SMR No: 451

Nat grid ref: E 487490 178890

Site name: Ockwells Manor, Cox Green

Periods: C15 to Post Medieval

Class: Manor house

Description: Grade 1 listed. Built by Sir John Morrey between 1446 and 1466. Timber framed with brick nogging built around small quadrangle.

SMR No: 452

Nat grid ref: A 489300 179900

Site name: Stafferton Lodge area

Periods: C2nd Roman

Class: Coin

Description: A silver coin of Antoninus found in 1891.

SMR No: 456

Nat grid ref: E 487980 177030

Site name: Foxley's Farm

Periods: Medieval to Post-Medieval

Class: Moat

Description: SM 12026. Moated platform contained a manor house which was burnt down in C18. Site is now an orchard. It is thought that "excavation" took place in c1972.

SMR No: 459

Nat grid ref: C 489500 178520

Periods: Roman

Class: Unclassified

Description: A pit with a variety of domestic and agricultural artefacts suggest a farmstead or villa? nearby. Excavated by Mrs C Graham in 1962. Finds include:

459.01.001 - pottery

459.01.002 - flint blades/flakes

459.01.003 - bronze ear scoop

459.01.004 - iron nails

459.01.005 - iron knife

459.01.006 - whetstone

459.01.007 - carbonised grain seed.

SMR No: 460

Nat grid ref: E 487060 177670

Periods: Unknown prehistoric - Neolithic ?

Class: unclassified

Description: A pit containing ?neolithic material suggests occupation of some sort in this area. Pit located during gas pipeline construction by members of Maidenhead & District Archaeological Society in 1963. Finds include:

460.01.001 - 3 pot boilers

460.01.002 - 2 flint flakes

460.01.003 - pot sherd.

SMR No: 462

Nat grid ref: C 488870 178630

Periods: Medieval - Post Medieval

Class: Enclosure-moat?

Description: APs indicate E and S sides of an enclosure (2 other sides formed by natural features). Site defined by low spread bank with outer ditch, approached from S by a track (SMR 462.02.000 - part of modern field boundary system?). Rectangular building within suggests a late/post medieval date (SMR 462.01.000). 1844 Tithe shows E arm. Possible site of Cresswells Manor?

SMR No: 463

Nat grid ref: C 489180 179030

Periods: early Mesolithic

Class: unclassified

Description: SAM 144. An extensive area of worked flint located during drainage works was excavated by MASHS in 1970-1971. Produced 1000's of worked flints may represent one large or several smaller camp sites. Beside a reed swamp/lake. The site is overlain by a Saxon settlement. Also found:

463.00.001 – Bronze and Iron Age pottery

463.00.002 – 1st/2nd century Romano-British pottery

463.01.000 – Mesolithic microliths X117

463.02.000 – Mesolithic scraper X 85

463.03.000 – Mesolithic burins X 12

463.04.000 – Mesolithic tranchet axes X2

463.05.000 – Mesolithic saw X5

463.06.000 – Mesolithic blades and flakes

463.07.000 – Mesolithic blades X 484

463.08.000 – Mesolithic cores X235

463.09.000 – Mesolithic microburin X25

463.10.000 – Mesolithic hammerstone X4

463.11.000 – Hazel nut shells

SMR No: 464

Nat grid ref: C 489180 179030

Periods: C8th

Class: Unclassified

Description:SAM 144? Overlying the Mesolithic site is evidence for Saxon settlement:

464.00.001 – Grass tempered pottery

464.00.002 – Saxon pot sherds

464.01.000 – Piled timbers. Excavation revealed a series of pointed stakes at 1.5m intervals driven into peat deposit. Timbers C14 dated to 753+/-155 AD.

SMR No: 467

Nat grid ref: C 489640 179260

Site name: Cannon Hill

Periods: Early neolithic

Class: Unclassified

Description: Several early neolithic pits/shafts with extensive deposits of flint and pot were found following the demolition of Cannon Hill House. Some flint of late mesolithic character suggesting a lengthy settlement of this area. Excavated in 1975 by Bill Startin.

467.01.000 – Pit 1 Fill contains:
Neolithic flint cores, scrapers, flakes and blades, arrowhead Fengate pottery. Pottery also includes small cups, carinated bowls. Charcoal dating to 3320+/–110 BC. Mesolithic material includes microliths, burins, microburins.

467.02.00 Pit 2 Fill contains:
Neolithic blade and flakes
467.03.000 Feature 4 – roughly circular pit excavated to a depth of 2m, filled by natural deposits? Finds included neolithic cores, blade/flakes, Ebbsfleet pottery:

467.04.000 Feature 8 – Oval pit containing neolithic blades, flakes and pottery.
467.05.000 Feature 24 – Steep sides, flat bottomed gully. No post pipes were recorded
467.05.000 Feature 24 – Steep sides, flat bottomed gully. No post pipes were noted. Feature visible as a soilmark. Near Feature 25. Finds included a flake, a core and a fragment of coal.
467.06.000 Feature 25 – Circular pit / shaft.
467.07.000 Feature 23 – Iron Age pit containing Iron Age pottery.

SMR No: 468
Nat grid ref: E 489390 179280
Site name: Braywick House
Periods:C17 – C18th
Class: House

Description: Grade II* listed. Large brick house with Mansard roof of Cumberland stone slates. Brick built wall and tunnel (drain?) discovered in 1966 (SMR 468.01.000).

SMR No: 471
Nat grid ref: E 489200 178350
Site name: Moor Farm
Periods: Medieval to C16th
Class: House-Farm
Description: Grade II. A large timber framed farmhouse.
471.01.000 - Barn. Grade II long barn with 8 equal sized bays. Site was recorded and excavated revealing wall resting on oak sills. Beneath floor were several layers of alluvium which sealed a dark deposit containing bones and Saxon pottery. Pot was similar to that found nearby (SMR 464) and dated to early C7th.

SMR No: 867
Nat grid ref: C 488300 177700
Periods: Roman
Class: Vessel
Description: Small British or Roman sepulchral vessel, formed of a light coloured and half-baked clay and greatly resembling the Praefericula used in liations. Was found near the brickyard in area of Stud Green. Near it were several arrowheads of bone and flint.

SMR No: 2596
Nat grid ref: C 487000 179500
Periods: Saxon - Medieval
Class: Pottery sherds
Description: Saxon/early Medieval sherds.

SMR No: 2603

Cresswells Farm

Nat grid ref: A 4885 1784

Periods: Unknown

Class: Stone

Description: Observed by Maidenhead and District Archaeological & Historical Society in gas trench. Six large foreign stones arranged in a semi-circle. All were about 18" high and appear to have been set upright. (see SMR 2604).

Text from the Berkshire Archaeological Journal Vol 61:1964 pages 99 - 100:

"Members of the Maidenhead District Archaeological and Historical Society watched the cutting in September 1963 of a trench for a gas pipe from Bray to Waltham St Lawrence. Two unusual groups of large stones in the sides of the trench were reported in the parish of Bray, one group of about six near Cresswells Farm (SU 885 784) and three others near Great Thrift Wood (SU 872 777). A pit was seen near the latter group and it produced three pot boilers, two small flint flakes and a sherd of soft, gritty pottery. The stones are of a calcareous sandstone foreign to the district and were roughly semi-circular with a diameter of about 18", and the same height. A photograph of one of them, broken by the trench digging machine, suggests they could have been the bases of upright stones set in the gravel."

(No accession numbers or other references - Reading Museum Consulted)

SMR No: 2604

Nat grid ref: A 487200 177700

Periods: Unknown

Class: Stone

Description: Observed by Maidenhead Arch & Hist Soc in gas trench. Three large foreign stones, apparently originally upright. (see SMR 2603).

SMR No: 2618

Nat grid ref: G 489000 178000

Site name: Braywick to Holyport

Periods: Roman

Class: Urn

Description: A Roman urn containing a cremation 30 yards from the proposed line of a Roman road in 1836. Found south of Braywick, between there and Holyport Field

SMR No: 3447

Nat grid ref: C 488150 179500

Site Name: Shoppenhangers Farm

Periods: C13

Class: House/Manor

Description: The site of Shoppenhnager Manor, believed by Kupkerman to be a moated site. There is no evidence in his reference to support this.

SMR No: 3495

Nat grid ref: G 489000 180000

Site name: Braywick

Periods: C2nd

Class: Coins

Description: Two coins of the Antonines (138–180AD) found near "supposed traces of Roman road from Braywick to Cockmarsh" (Peake, p182). Present location of coins unknown. (see also SMR 452).

SMR No: 3782

Nat grid ref: E 489240 178320

Site Name: Moor House Farmhouse

Periods: C14/15th

Class: House/Hall House

Description: Grade II. C14 and C15 Hall houses, now one farmhouse. Timber framed with brick and render infill. Old tile roof.

SMR No: 3783

Nat grid ref: E 489200 178310

Site name: 1–4 Ascott Road

Periods: C16th

Class: Barn

Description: Grade II. Originally a C16 threshing barn, now four houses. Timber framed, weather-boarded, old tile roof.

APPENDIX CPM 2

Conservation Area Statement for Holyport

CONSERVATION AREA STATEMENT

HOLYPORT

Forward Planning Manager
October 1994



ROYAL BOROUGH OF WINDSOR AND MAIDENHEAD

CONSERVATION AREA STATEMENT
HOLYPORT

1. Brief History

1.1 There is evidence of settlement in the Holyport area since Roman times. As in most areas, Saxon dwellings have not survived because they were made of perishable materials, however, one site excavated in Holyport in 1972 produced evidence for a group of dwellings that were preserved in peat and yielded wooden stakes and brushwood floors with grass marked pottery typical of that period. This site was dated by radio carbon to about AD 753.

1.2 The earliest reference to a settlement named 'Horipord' is in the 13th Century. The prefix "Hori" may be from "Horrig" meaning muddy which when combined with the suffix "port" suggests the existence of a "muddy market town" from early times, probably around the Greens. Since the settlement is situated close to a road recorded in Domesday times leading from Windsor to Reading, it is likely that it was an important trading centre. Further evidence of the settlement's importance is the fact that there were at least 7 manor houses in the vicinity of the village, probably providing residences for knights or men at arms associated with nearby Windsor Castle. The later "Holy" prefix may derive from the relationship of the settlement to a nearby ecclesiastical settlement at Canon Hill.

1.3 By the medieval period most of the land in Holyport was under the control of the St Philiberts manor which was situated in a compound at the northern end of Holyport Street. The only relics of its former existence and a subsequent mansion on the site are the dried up moat now located in the grounds of Lodge Farm to the north east of the Conservation Area.

1.4 Holyport Street, which led to the old mansion, was probably the main street in the medieval period, and is flanked by many early listed buildings. The village green has in the past been common pasture, and throughout history it has been used for many celebrations.

2. Topography and Street Patterns

2.1 The settlement of Holyport is situated in an area of flat agriculture land between the settlements of Windsor and Maidenhead. Abutting the eastern side of the village is an area of new residential development which is effectively part of the Maidenhead Urban Area. Directly to the north of the Conservation Area is the M4 motorway which traverses in an east to west direction. To the south is agricultural land with areas of ancient woodland which are remnants of Windsor Forest. In addition there are two linear settlements to the south, namely Moneyrow Green and Stud Green.

2.2 The Conservation Area is centred on the extensive L shaped village green which is bisected on its long arm by the Ascot Road and has its main core on the shorter 'arm' which is dissected by several smaller roads and access tracks. Several properties front onto this roughly

rectangular core area, these houses are of varying sizes which reflect a characteristic of much of the Conservation Area which is the mix of small cottage properties, and large houses in extensive grounds.

2.3 At its northern extremity the Conservation Area contains two working farm groups each set back from the Ascot road. Both are centred around listed buildings dating from the 14th Century (Moor Farm) and 17th Century (Cresswells Farm) and perpetuating the names of two of the medieval manors.

2.4 From the farms the Ascot Road continues southwards and is flanked on its western edge by a variety of small, predominantly single storey houses set back from the road edge behind hedges and fences. On the eastern side the road is bounded initially by a hedge and then by a high boundary wall.

2.5 Moving further to the centre of the village along Ascot Road, a modern development, Hearne Close is set back off the western side. The Ascot Road continues south west through the Conservation Area bounded by the wide verges of the Green which is itself bounded on the western edge by The Bourne channel. There is a small group of houses set in large grounds at the southern end of Ascot Road where it crosses Bourne bridge.

2.6 The other principal through road, running approximately north-south through the Conservation Area, is Holyport Road continuing as Money Row Green Road south of the Green. On its northern entry point into the Conservation Area it has on its north western side the modern development of Cadogan Close and Manor Way both of which are enclosed from the road by extensive boundary planting. There is a similarly verdant boundary on the south eastern side of Holyport Road provided by the extensive grounds of the Lyndon Manor complex. As the road continues south of the Green to Moneyrow Green it is bounded on the west by the walled gardens enclosing Long Chase and Chuffs and on the east by hedges.

2.7 Two smaller roads lie behind these main through roads. Firstly Holyport Street, probably the core street of the original settlement runs north from the central Green. It contains several timber-framed listed buildings the earliest dating from the 14th Century. This is the most densely built area of the Conservation Area with many of the properties on the eastern side fronting directly onto the street with those on the western side set back in small front gardens, bounded by walls and hedges. Holyport Street is now a cul-de-sac for traffic but at its northern extremity it continues to join Holyport Road along a track known as Blind Lane.

2.8 The other small lane is Langworthy Lane that lies to the south east of, and links into, Money Row Green and Holyport Road. This road and Peters Lane, Gays Lane and Primrose Lane that lead off it, have a more rural and enclosed character than the other roads in the Conservation Area. Langworthy Lane is bounded by properties set in extensive grounds and enclosed by well planted boundaries, and some high boundary walls.

3. Chief Architectural Features

3.1 Holyport Conservation Area contains buildings dating from the 14th to the 20th Century. It therefore has a variety of building styles and materials reflecting the development of domestic architecture. The diversity is increased by the range of size of properties, from small terraced cottages to substantial mansions. Properties are predominantly 2 storey, although some single storey bungalows are present, and some of the larger houses have an attic storey.

3.2 The earliest properties, concentrated principally along Holyport Street and around the core of the Green, were originally timber framed, some now have a rendered finish which, if painted, is usually white or a shade of off white. Others have brick infill of the local orange red colour. Roofs are simple gabled or hipped in shape and are clad in hand made clay tiles of a similar orange/red hue. The use of the local orange/red brick colour is also reflected in the later, 18th and 19th century houses some of which continue with tiled roofs while slate is also present usually on roofs of shallower pitch.

3.3 Several of the large 19th century buildings in the Conservation Area have followed the more formal styling of that period and have always been rendered. These are now maintained in a muted range of coloured finishes.

3.4 The 20th century development in the village have introduced more variety into architectural style and the colour of brickwork and roof cladding in the area, but these two larger developments (Cadogan Close and Hearne Drive) have a limited variety within themselves that gives them an identify. The small development a Manor Way exhibits a very modern design and use of extensive areas of glass.

3.5 Throughout the Conservation Area, window and door styles vary with the type and period of the houses but the predominant construction material is timber, with casement and vertical sliding sash windows the typical styles.

3.6 Several of the larger houses are bounded by substantial boundary walls. These are significant local features where they follow the road boundary and again make extensive use of the characteristic local orange/red brick. The wall around the Lyndon Manor complex are particularly decorative in its coping detail whilst the walls of The Lodge are less ornate but particularly dominant because of their proximity to the road edge.

4. Important Buildings

4.1 Whilst the vast majority of buildings within the Conservation Area make a positive contribution to the appearance and character of the Conservation Area it is possible to identify certain specific buildings that are particularly important in the Conservation Area. The importance may be derived their historic associations, architectural interest technological innovation, etc, or a combination of factors.

4.2 The Conservation Area contains a number of listed buildings that are thus recognised as being of special architectural or historic interest when assessed against national criteria. The listed building include buildings that provide evidence of Hall Houses dated from as early as the 14th Century at Moor Farm and Hamble Cottage. There are also a substantial number of later timber framed buildings dating from the 15th and 16th Century including Ann Duels House, Coventry Cottage, Little Tudor, The George Public House and The Rails. Some timber framed buildings of these periods were refaced or refronted in subsequent centuries and both Gays House and Holyport House provide interesting examples of where probably a fairly modest timber framed property has been added to and extended to now provide a substantial house with a facade of a later period.

4.3 Several smaller red brick cottages of 18th and 19th centuries are also listed. These include four 18th Century cottages on the west side of Ascot Road and the early 19th Century terrace of Pamela Row that faces Ascot Road across the green. This is probably the most formal group of buildings in the Conservation Area but the cottages blend well into the overall Conservation Area setting by their continuation of the use of the predominant red brick and the softening effect of their small front gardens.

4.4 The listed buildings in the Conservation Area also include several buildings not originally designed for residential use. These include the 16th Century barn at Moor Farm (now converted to houses), the stables at Cresswells Farm, the small brewhouse next to the George Public House on the Green and the very unusual Real Tennis court Building, a very substantial late 19th Century building situated at the rear of The Lodge.

4.5 In addition to these listed buildings many other properties in the Conservation Area contribute to its character and appearance. Those include the substantial properties of Bournebridge House, Rawdon Hall and Chuff House which all demonstrate the late 18th early 19th Century formal architectural styling of a country house set within substantial grounds, and from an earlier period but altered in subsequent centuries, the red brick and part timber frame complex of Lyndon Manor with includes a converted barn. This is also set within extensive walled grounds.

4.6 The buildings that front onto the central core of the Green are of many different styles and periods but they combine to form a well established group of buildings, Plashers Mead, The Lodge and Pebbles Court are particularly distinctive in addition to the listed buildings in the area.

4.7 The properties in Holyport Street are much smaller and stand in smaller grounds but the street includes in addition to the listed buildings several 18th Century buildings, including Vor Cottage, Apple Tree and Rose Cottages, and several groups of Victorian Cottages.

At its southern end the street contains several slightly larger properties, of 18th and 19th Century and earlier origin including Green View, The Belgian Arms and Manor House. Although of different styles these properties blend to form an important entrance to the street.

4.8 In Langworthy Lane in addition to Gays House and the Lyndon Manor complex the other buildings of local importance include the Victorian terrace including Gaymead Cottage, and Primrose Farmhouse.

4.9 The Conservation Area contains an unusual group of 20th Century houses in Manor Way. The single storey flat roofed, predominant glass structures were constructed in the 1960's to the design of the architect Peter Foggo. They are now attracting national interest as an example of this architect's domestic architecture and whilst they are atypical in material and design to the overall Conservation Area they are now well established features within it and their low level and extensive planting of the site enables this site to appear as a relatively open area in views from the Green.

4.10 The Conservation Area also contains some distinctive structures that are local landmarks. These include the water tower which is prominent in many views into and across the northern end of the Conservation Area and the war memorial shelter and adjacent telephone box at the southern end of Holyport Street.

5. Trees and Open Spaces

5.1 The village green is the dominant feature of this Conservation Area. Although dissected into separate areas of open space by the network of roads passing through the village, the low key natural granite kerb provides a soft edging and absence of intrusive traffic signs or lighting, enable these open spaces to merge to provide a spacious centre to the Conservation Area. Significant trees on the Green include an oak and horse chestnut. A line of willows next to the pond in front of the Belgian Arms Public House creates a more intimate area of open space. Significant trees viewed from the Green include those in the grounds of Long Chase on Moneyrow Green Road, Little Tudor, Ascot Road, and an collection of conifers in Plashers Mead. As the Ascot Road enters into the Conservation Area from the south, it is flanked by long stretches of open space on either side. These areas are defined by mature hedge lines and are slightly less formal in character than the central core green area. They provide a long open approach into the village from the south.

5.2 The other important open space in the Conservation Area forms part of the Cadogan Close residential development, this contributes to its spacious character and reflects the form of the older core of the Conservation Area. This open space benefits from a number of small trees.

5.3 Another important area of relatively open land are the grounds of Holyport Lodge and the agricultural land to the north which provide an open rural character to the northern end of Holyport Street.

5.4 That part of the Conservation Area to the east of the Green has a less spacious and more intimate character, due to the heavy concentration of trees. Langworthy Lane itself is well treed and there are also notable specimens within the extensive grounds of the large properties situated on either side of the road.

6. Uses

6.1 The predominant use of properties in the Conservation Area is residential. The only commercial buildings in the Conservation Area are the two public houses, the George and Belgian Arms, and the Real Tennis Club in the grounds of Holyport Lodge. A number of retail premises on the Ascot Road have been vacated in the last decade, and Holyport Lodge is now used as a residential nursing home. With regards the two farm complexes in the north of the Conservation Area, both are in active use, but Moor Farm has witnessed various conversions for residential use.

6.2 The two through roads through the Conservation Area are fairly heavily used by traffic, particularly the Ascot Road which links Maidenhead to Ascot and Bracknell. Langworthy Lane is mainly used as an access road to the properties on it, as does Holyport Street but the latter does suffer from on street parking problems due to the presence of several small houses without parking facilities.

7. Relationship to Countryside and Important Views

7.1 The Green is the visual focus of the settlement. Some of the most important views in the Conservation Area are actually inwards from the various residential areas towards the Green and there are clear views between the open spaces which make up the Green. The spacing of the properties around the Green does however permit views out across the surrounding agricultural land. In particular there are long views from the Green over the grounds of The Lodge to the open land to the north, including the distinctive Water Tower. There are also views to the west across the agricultural land towards Cresswells Farm and glimpse views between properties often terminated by trees in other properties.

7.2 On a more intimate scale their are a series of views as one moves north along Holyport Street before it opens out with wider views across open land at its northern end.

8. Enhancement Opportunities

8.1 The top end of Holyport Street is used by traffic as a turning head to the no through road and is consequently pitted and in a poor condition generally. A small brick structure to one side also requires attention. Some resurfacing and curbing detail appropriate to a rural area would be beneficial. Some of the boundary walls throughout the Conservation Area are suffering from lack of maintenance. Since these are important features of the Conservation Area their repair is important.

9. Boundaries

9.1 North - The boundary follows field lines to the north of agricultural buildings at Moor Farm and Cresswells Farm.

East - The boundary runs along the rear edge of land to the north of Holyport Lodge, to the head of Holyport Street and continues along Blind Lane, and then along a section of Langworthy Lane which runs in a north/south direction.

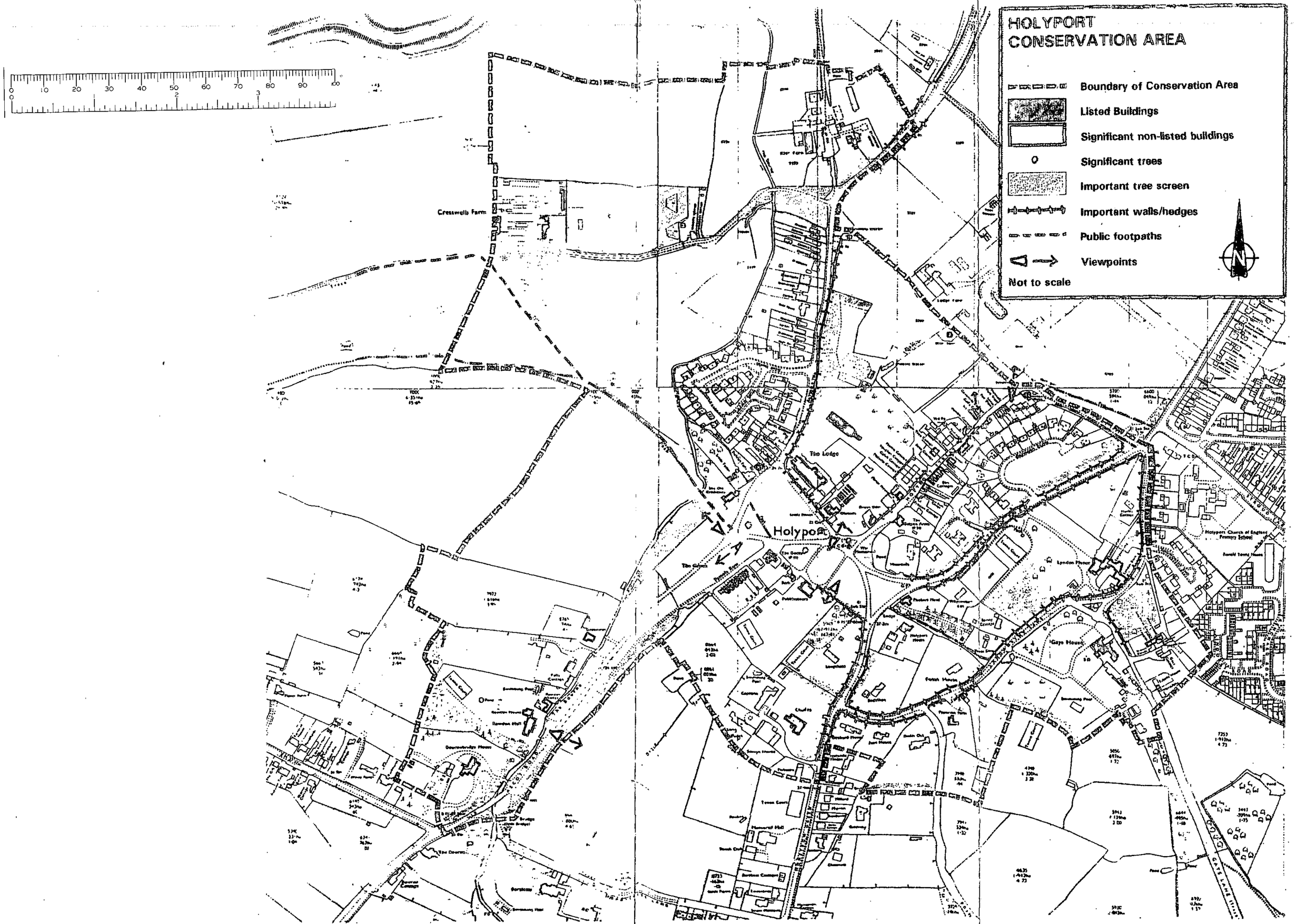
South - Here the boundary runs along the rear boundaries of large properties on the southern side of Langworthy Lane and to the south of the Green. The boundary follows the hedgeline which defines the rear boundary of a field adjacent to Ascot Road.

West - The boundary follows the various field and garden lines from the properties fronting onto Ascot Road in the south of the Conservation Area, up to Cresswells Farm in the north.

HOLYPORT CONSERVATION AREA

- Boundary of Conservation Area
- Listed Buildings
- Significant non-listed buildings
- Significant trees
- Important tree screen
- Important walls/hedges
- Public footpaths
- Viewpoints

Not to scale



APPENDIX CPM 3

Listed Building Descriptions for Cresswells Farm

JS

TOWN AND COUNTRY PLANNING ACT 1971, SECTION 54

Twenty First list of Buildings of Special Architectural or Historic Interest

As at 2 May 1989
BOROUGH OF WINDSOR AND MAIDENHEAD (BERKSHIRE)
(Parish of Bray)

WHEREAS

1. by section 54(1) of the Town and Country Planning Act 1971 the Secretary of State for the Environment (hereinafter called "the Secretary of State"), with a view to the guidance of local planning authorities in the performance of their functions under the Act in relation to buildings of special archiectural or historic interest, is required to compile lists of such buildings;

2. it appears to the Secretary of State that the buildings described in the schedule hereto are buildings of special architectural or historic interest;

3. the Secretary of State has consulted those persons who appear to him appropriate as having special knowledge of, and interest in, such buildings;

NOW THEREFORE the Secretary of State, in exercise of the powers conferred on him by section 54(1) of the Act, hereby compiles the list of buildings of special architectural or historic interest described in the schedule hereto. This list is cumulative and records all buildings included in previous lists compiled by the Secretary of State or his predecessors under the Town and Country Planning [illegible] in [illegible] the district part of the aforementioned District Council area in addition to buildings now listed for the first time. Buildings previously listed (under the aforementioned Act or earlier legislation) are to be treated as listed from the date appearing against the entry. Where [illegible] the building in question is to be treated as listed from the date appearing above.

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SU 87 NE | BRAY | ASCOT ROAD (west side, off) Holyport

9/3 | Cresswells Farmhouse and attached garden wall

G.V. | II

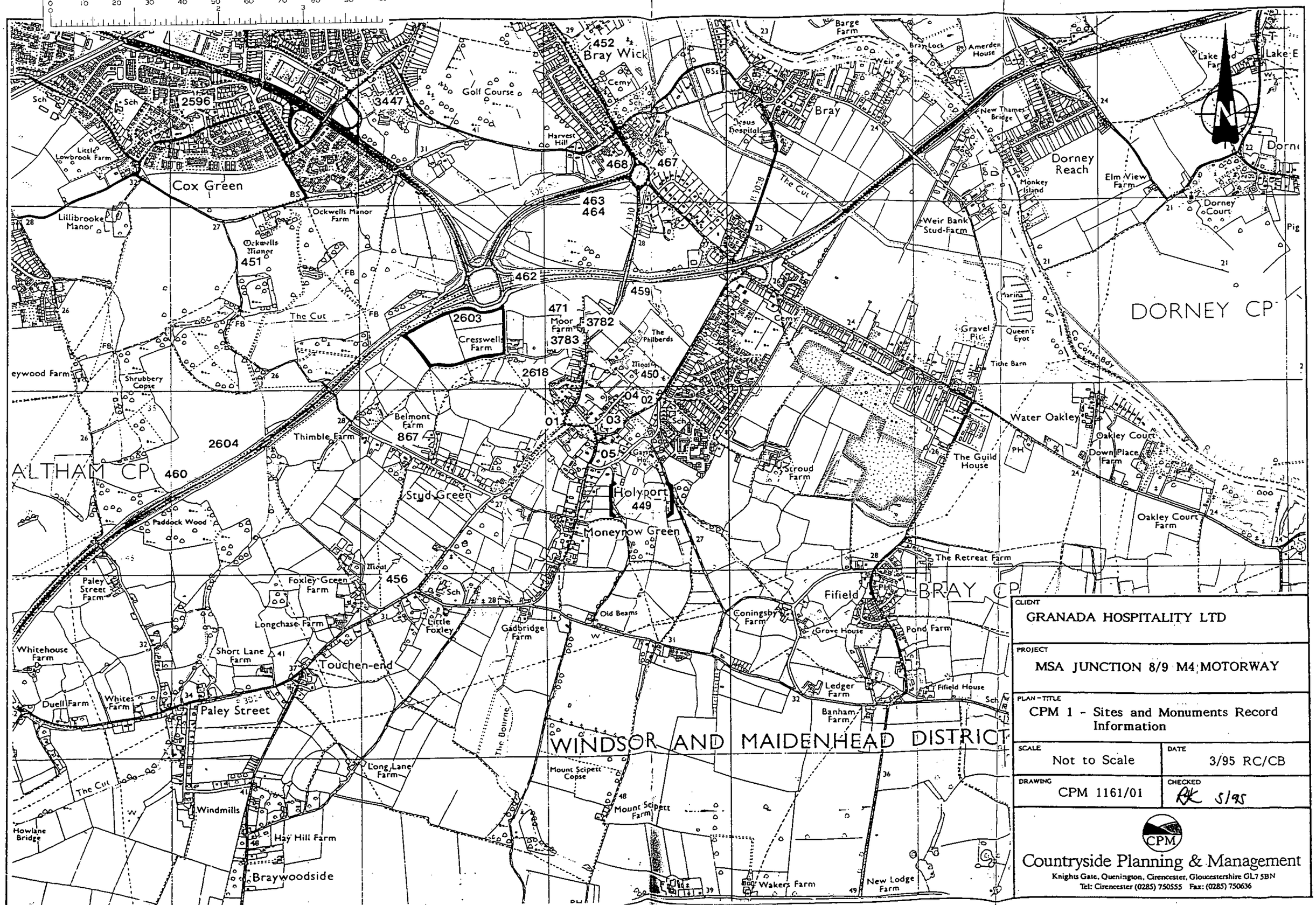
Farmhouse, now 2 houses, and attached garden wall. Probably dates from C17, largely rebuilt C18, altered and extended C19 and C20; wall C19. Brick, some vitreous headers; old tile roofs, gabled, hipped and half-hipped of different heights. Nearly square plan formerly, now with extensions each end. Part 2 storeys, part 2 storeys and attics. 2 chimneys with clay pots. Sash windows with glazing bars, mostly C18; some C19 and C20. Gauged brick arches. Entrance (west) front: irregular. Oldest part in centre with brick string at first floor level. 2 gabled dormers with 2-light casement windows. Sash window in moulded architrave frame on first floor, similar window on ground floor but larger. C20 panelled entrance door on left, now disused. Right hand section: lower roof; one bay of similar windows. Left hand section set back slightly with one bay of similar windows and one C20, 2-light casement on right of first floor. To the left of this is a 3-bay C20 extension in similar style set right back. Entrance is now on east front of house. Garden wall on west, enclosing front garden. Semi-circular brick copings; approximately one metre high. 17 metres wide and five metres on returns, with C20 iron gate in each return. Interior: large inglenook chimney, and C17 panelling in dining room and drawing room.

SU 87 NE | BRAY | ASCOT ROAD (west side, off) Holyport

9/4 | Stables, approximately 55 metres west of Cresswells Farmhouse

G.V. | II

Stables, now storage. Late C17, altered C19. Brick, English bond; old tile gabled roof. Rectangular plan. One and a half storeys. East front: central plank stable door with 2-pane overlight. Wide plank doors on each side of this and 2-light casement window at each end. All under segmental brick arches. Clock in circular brick opening over centre door.



CLIENT
GRANADA HOSPITALITY LTD

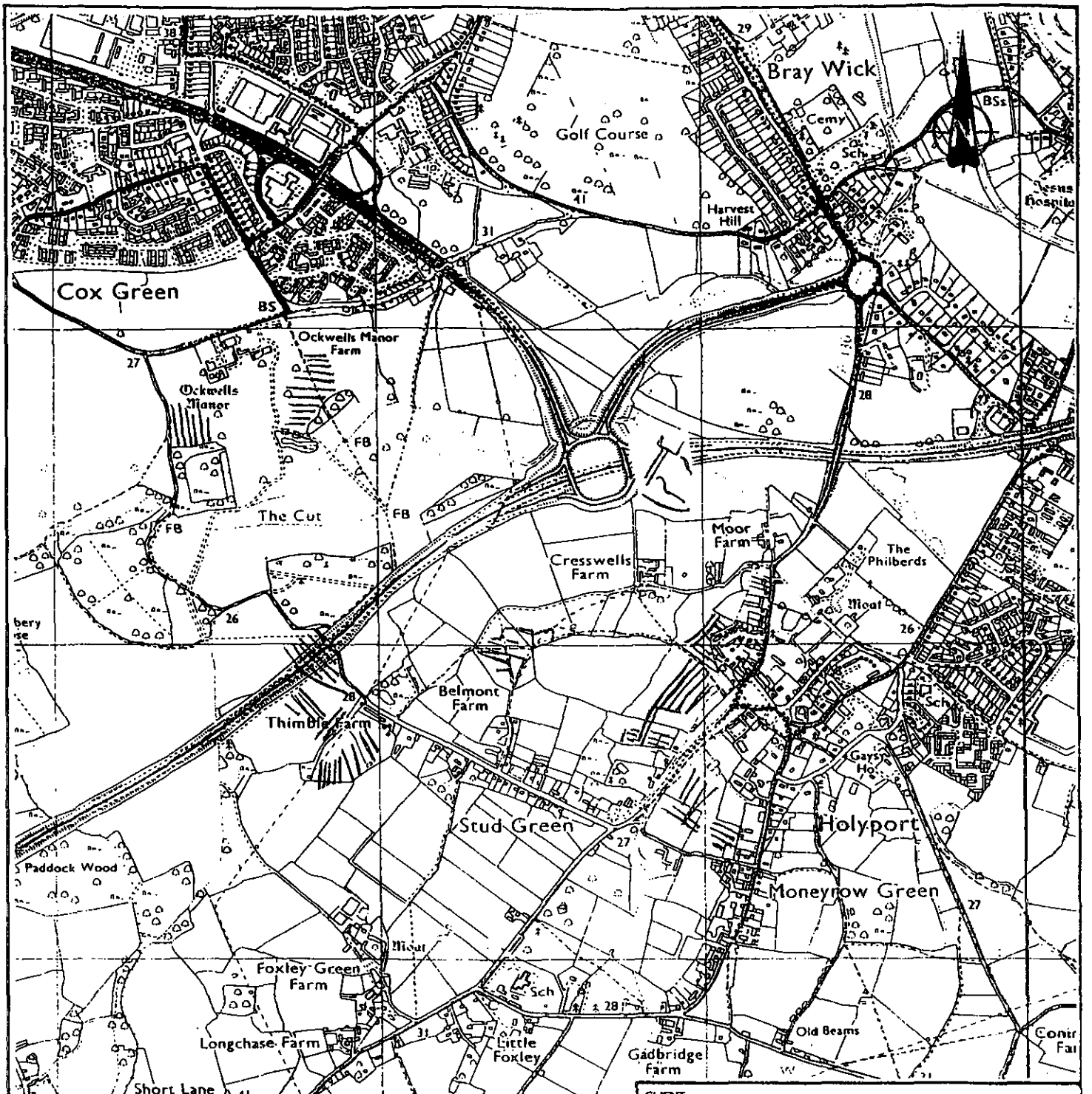
PROJECT
MSA JUNCTION 8/9 M4 MOTORWAY

PLAN – TITLE
CPM 1 - Sites and Monuments Record Information

SCALE	DATE
Not to Scale	3/95 RC/CB

DRAWING	CHECKED
CPM 1161/01	RK 5/95

CPM
Countryside Planning & Management
Knights Gate, Quenington, Cirencester, Gloucestershire GL7 5BN
Tel: Cirencester (0285) 750555 Fax: (0285) 750636



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GRANADA HOSPITALITY LTD

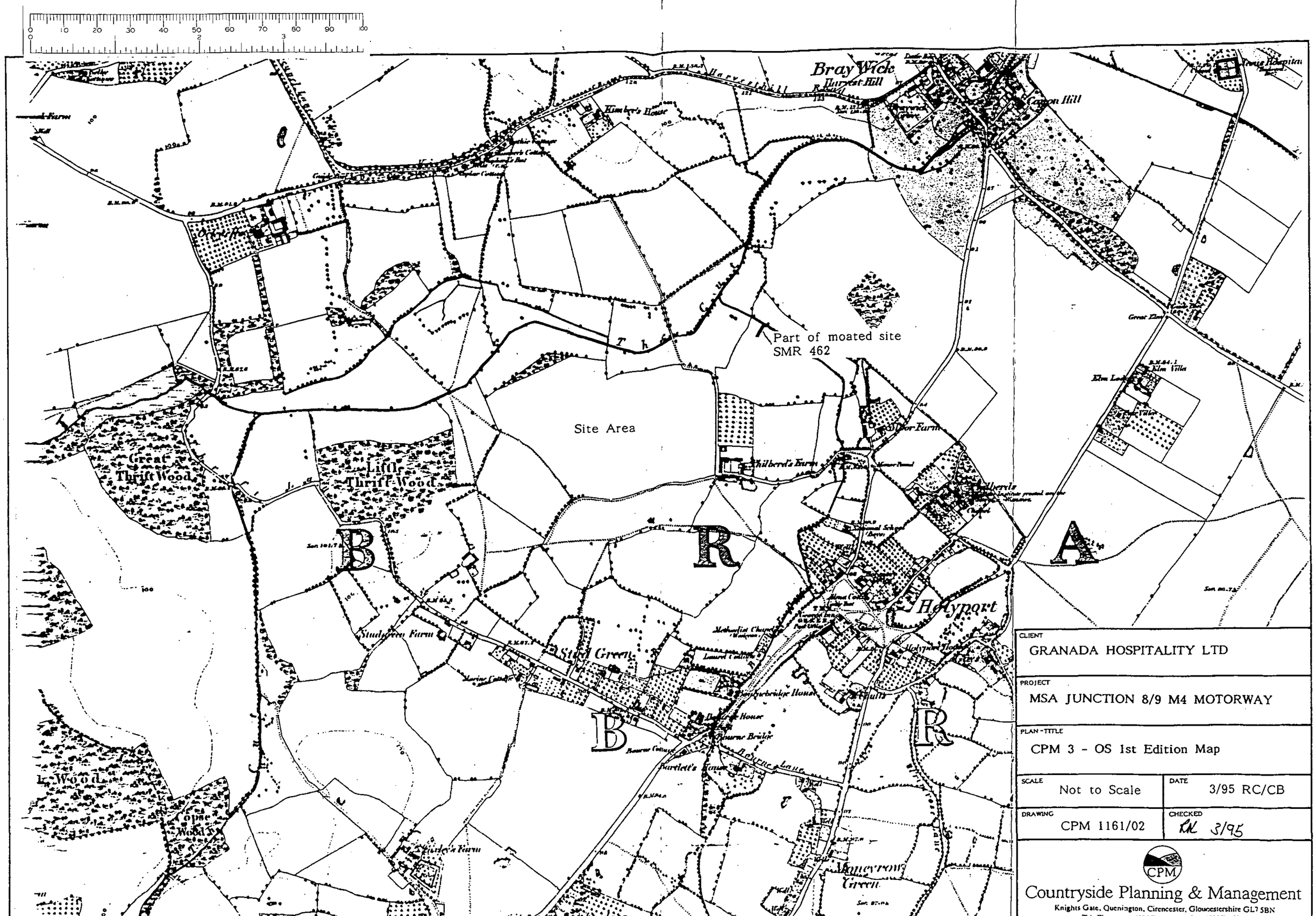
PROJECT
MSA JUNCTION 8/9 M4 MOTORWAY

PLAN - TITLE
CPM 2 - Air Photographic Information

SCALE	DATE
Not to Scale	3/95 RC/CB

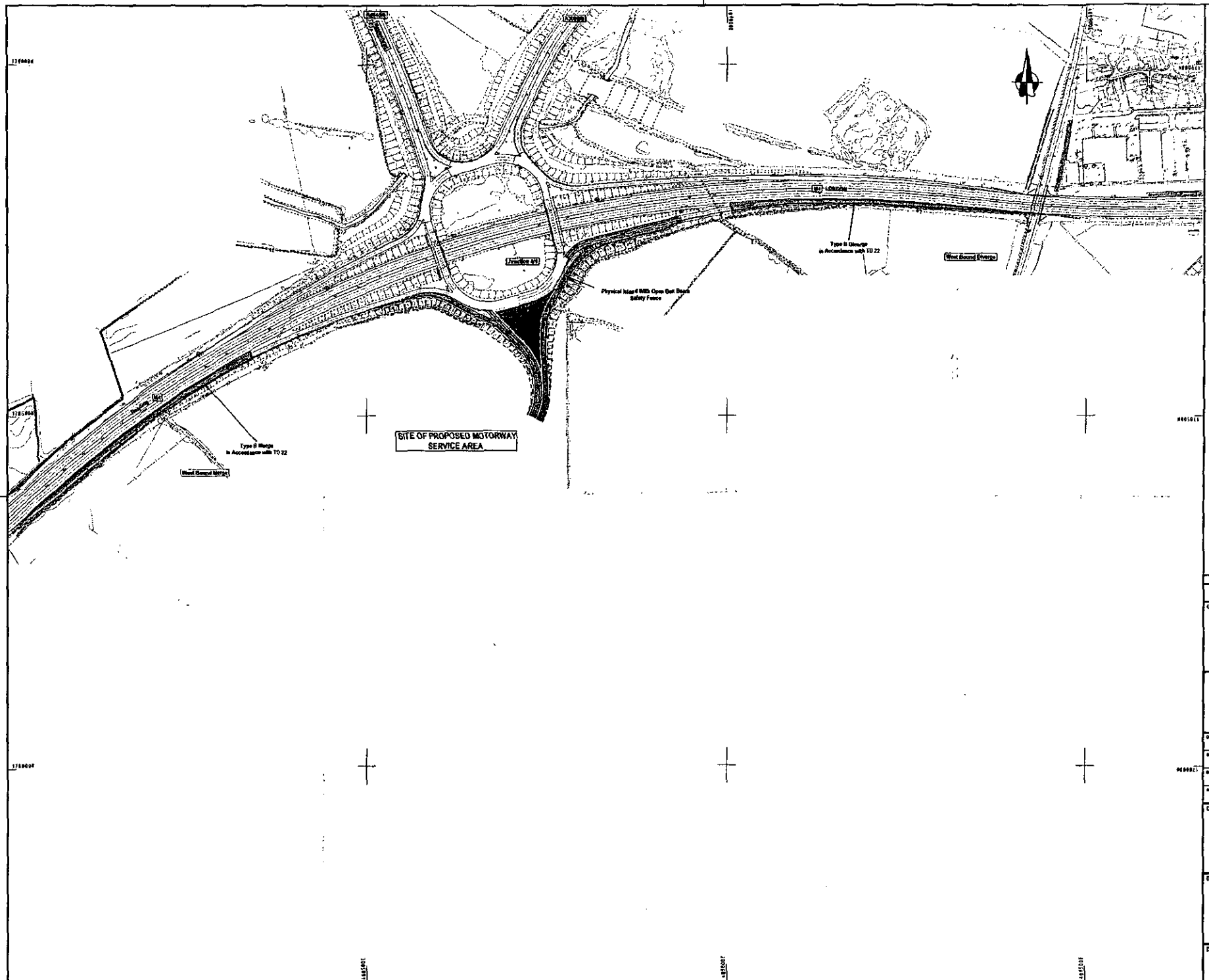
DRAWING	CHECKED
CPM 1161/03	RHC 3/95

CPM
Countryside Planning & Management
Knights Gate, Quenington, Cirencester, Gloucestershire GL7 5BN
Tel: Cirencester (01285) 750555 Fax: (01285) 750636



CLIENT	GRANADA HOSPITALITY LTD
PROJECT	MSA JUNCTION 8/9 M4 MOTORWAY
PLAN - TITLE	CPM 3 - OS 1st Edition Map
SCALE: Not to Scale	DATE: 3/95 RC/CB
DRAWING: CPM 1161/02	CHECKED: RC 3/95

Countryside Planning & Management
Knights Gate, Quenington, Cirencester, Gloucestershire GL7 5BN
Tel: Cirencester (0285) 750555 Fax: (0285) 750636



KEY

- Proposed Carriageway
- Verge (inc. Hardstrip)
- Earthworks
- Potential Landscaping Area
- Physical Island

0 / 36785

Issued For information

Client

GRANADA

HOSPITALITY LTD

CONSULTING ENGINEERS

URS

Thorburn Colquhoun

Office of Origin: Bedford

Designed	S.D.W.	Feb 01	Checked
Drawn	S.D.W.	Feb 01	Approved

Scale: 1:2500 — Orig Size: A1

Contract

Maidenhead MSA Westbound

Drg. Title

Option6

Drg. No.: 33945/P/108/SK6 — Rev.