

Arboricultural Assessment Report

In respect of

Land off Denford Road, Ringstead,

Northamptonshire

Report Ref – KD.RNG.ER.003V1

August 2023

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Revision	Author	Checked by	Date		
V1	SP	RS/RD	August 2023		

1.0 INTRODUCTION

- 1.1 Kedd Limited have been commissioned to undertake arboricultural assessment of the trees located within the proposed residential development for land off Denford Road, Ringstead, Northamptonshire(hereafter referred to as the site).
- 1.2 This assessment was required in order to update previous arboricultural assessment conducted by the Mayhew Consultancy in 2023.

<u>Objectives</u>

- 1.3 The objectives of this arboricultural assessment are to evaluate the overall condition of the trees on, and adjacent to the site. We have considered the arboricultural impacts of both the construction and operational phases of the scheme. We have also considered potential impacts to trees which may be affected by construction or access works which may be located some distance from the actual site boundary.
- 1.4 Please see Appendix A for the Tree Schedule Appendix B for the Arboricultural Constraints and Protection Plan.
- 1.5 The arboricultural survey aims to assess the following:
 - The suitability of trees for retention as categorised in accordance with BS 5837: 2012 'Trees in relation to design, demolition and construction – Recommendations';
 - the constraints presented by the trees;
 - impacts of the scheme development in relation to any retained trees;
 - the arboricultural impacts of the proposed scheme; and
 - the requirements for tree management where appropriate.
- 1.6 British Standard (BS) 5837: 2012 'Trees in relation to design, demolition and construction Recommendations' requires that information on the constraints associated with retained trees be sent to the project designers. This information is detailed in a Tree Constraints Plan. The constraints, which are covered by BS 5837, are associated with issues relating to retained trees both above and below ground, and the necessary measures to ensure their safe retention.

Site Location and Description

- 1.7 The land surveyed and centred on Ordnance Survey grid ref. SP 9882 7502 lies south of Denford Road, Ringstead, Northamptonshire and adjacent the east of Raunds Road.
- 1.8 The Site comprised a horse feed factory unit of three buildings and an associated farm shop (Nene Valley Country Store) fronting Denford Road and fields to the rear. At its north-western edge adjacent the factory further single storey sheds were recorded in association with tree cover.
- 1.9 The surrounding land to the south, east and west comprised arable and pasture fields within a network of hedgerows and a few small woods. Existing residential development of Ringstead village was to the north and Kinewell Lake and the River Nene corridor (encompassing local, national and international designations for wildlife) was to the west.

Proposed Development

1.10 The proposals are to construct 35 new residential buildings on the site in conjunction with new infrastructure which includes access roads, footpaths, car parking and amenity grassland gardens.

2.0 NATIONAL LEGISLATION AND PLANNING POLICY

Tree Preservation Orders

- 2.1 Trees in the United Kingdom may be protected by a Tree Preservation Order (TPO). Government guidance in relation to Tree Preservation Orders and trees in Conservation Areas states that: "Tree Preservation Orders are made by the Local Planning Authority to protect specific trees, groups of trees or woodlands in the interests of amenity. An order prohibits the:
 - Cutting down;
 - Topping;
 - Lopping
 - Uprooting
 - Wilful damage; and
 - Wilful destruction.
- 2.2 of trees without the Local Planning Authorities written consent." "In the Secretary of State's view, cutting roots is also a prohibited activity and requires the authorities consent."

Ecological Legislation

- 2.3 Tree work or tree removal will give rise to ecological impacts which may be constrained by current legislation including:
 - The Conservation Regulations (2017),
 - The Wildlife and Countryside Act (1981),
 - The Natural Environmental and Rural Communities (NERC) Act (2006), and
 - The Countryside and Rights of Way Act (2000).
 - Further specialist surveys may be required if works are likely to impact trees of ecological importanc

3.0 ASSESSMENT METHODOLOGY

- 3.1 The arboricultural survey was undertaken by Steven Pagett BSc who is a Principal Ecologist from Kedd Limited on the 21/08/2023. The weather conditions during the survey were sunshine with light air (1 on the Beaufort Scale), with 20% cloud cover and starting temperature of 18°C.
- 3.2 Trees were photographed and measured for height, crown spread, and stem diameter. The physical and structural condition of each tree, or group of trees, was noted and recommendations made for tree work or on-going maintenance requirements are detailed in the Tree Survey Schedule presented as Appendix A.

Principal Trees Age Classification

- 3.3 The following classification has been employed:
 - Young: Saplings and young trees under 10 years of age.
 - Middle Aged: Trees older than 10 years but less than one third of the life expectancy of their species, normally making substantial extension growth.
 - Mature: Trees between one third and two thirds of the life expectancy of their species. Approximately full height and girth, increasing only slowly over time.
 - Over mature: Trees beyond two thirds of the life expectancy of their species. No significant extension growth. Crown starting to break up and decrease in size.
 - Veteran Trees are beyond the over mature stage but because of their size and age are significant features within the landscape and which can be rejuvenated and conserved by appropriate management.

Tree Survey and Tree Condition

- 3.4 The surveyor assessed the individual condition of the trees identified within the area.The assessment of condition is based on a visual inspection only.
- 3.5 Each tree was assessed by consideration of the following:
 - a) any visible structural defects,
 - b) the size and form and the suitability of its position, and
 - c) the location with regard to the position of other relevant features.

Categories for Tree Constraints Plan

- 3.6 Individual trees are assessed and then placed into one of four categories as detailed below. For tree numbers please refer to the appended Tree Constraints Plan in Appendix B.
 - **Category A** (marked Green on the Tree Constraints Plan). Trees which are significant, and which must be retained, wherever possible, within the layout. Category A trees which are particularly good examples of their species or are essential components of a group (e.g. the dominant and/or principal trees within an avenue).
 - **Category B** (marked Mid Blue on the Tree Constraints Plan). These trees should be retained, wherever possible, within any development proposals. These trees have been downgraded due to impaired condition, such that they are unlikely to be suitable for retention beyond 40 years.
 - **Category C** (marked in Grey on the Tree Constraints Plan). Trees which do not have sufficient arboricultural merit to constrain development proposals.
 - **Category U** (marked in Red on Tree Constraints Plan). Trees which will not remain safe features beyond the short term and should be removed as part of any development proposals.
- 3.7 BS5837 requires that trees are further identified according to any particular merits defined as:
 - Arboricultural specimens sub division 1
 - Trees of landscape importance sub division 2
 - Trees with ecological, historical or cultural significance sub division 3
- 3.8 The design layout should allow for the retention of Category A and B trees where possible. Category C trees should only be retained in locations where they will not over constrain development proposals or present additional amenity issues.
- 3.9 Mitigation will be required for the loss of any trees, or groups of trees, which have been classified as Category A or B.

Root Protection Area

3.10 BS5837 defines the Root Protection Area (RPA) as a "layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority".

3.11 For each tree the RPA has been calculated. For single stemmed trees, the RPA is calculated as an area equivalent to a circle with a radius 12 times the stem diameter. For trees with more than one stem, the RPA has been calculated using the Helliwell Method with each stem being measured at 1.5m above ground level to calculate the basal area in m2. The shape and position of the RPA may be adjusted by the arboriculturist to take into consideration site factors such as soil type and depth, prevailing wind, slope and drainage or built structures such as roads or footings. The overall size of the RPA cannot be changed.

Key For The Tree Survey Schedule

Table 1: Key for the Tree Survey Schedule	
Height	Measured with clinometer in metres
Stem Diameter	Diameter measured at 1.5 m from ground
	level with tape in mm
Spread area (N, S, E, W))	Crown spread measured in metres at the
	points on the compass
Height of Crown Clearance	In metres to inform on ground clearance,
	shading and crown to stem ratio.
Age Class	Y-Young, SM- Semi-mature, M-Mature, OM-
	Over mature, V-Veteran
Physiological Conditions	Good, Fair, Poor, Dead
Structural Condition	Visual evidence of the presence of decay or
	danger of collapse
Category Grading	A-good, B-Moderate, C-Poor, U-Dead or
	dangerous

<u>Constraints</u>

3.12 There were no constraints identified during the survey.

4.0 SURVEY RESULTS

- 4.1 A total of 30 trees and 15 groups of trees were assessed as part of the arbouricultural survey. Of the surveyed trees, the following are to be removed as part of the proposals:
 - G3 (Category C) Group of cypress (*Cupressus × leylandii*) trees
 - **G9 (Category C)** Group of thorn
 - **G10 (Category C)** Group of thorn
 - **T3 (Category C)** Sycamore (*Acer pseudoplatanus*)
 - T6 (Category C) Sycamore
 - T7(Category C) Sycamore
 - **T9 (Category C)** Domestic apple (*Malus domestica*)
 - T10 (Category C) Sycamore
 - **T11 (Category C)** Yew (*Taxus baccata*)
 - T12 (Category C) Sycamore
 - **T13 (Category C)** Domestic apple
 - T14 (Category C) -- Cypress
 - T15 (Category C) -- Yew
 - **T16 (Category C)** Silver birch (*Betula pendula*)
 - T17 (Category C) Cypress
 - **T18 (Category c)** Ash (*Fraxinus excelsior*)
 - T21 (Category B) Deodar cedar (Cedrus deodara)
 - T22 (category B) Cypress
 - **T25 (Category B)** Field Maple
 - T26 (Category C) Deodar cedar
 - **T27 (Category C)** Norway Maple (*Acer platanoides*)
 - **T29 (Category U)** Domestic apple
- 4.2 As show above, there are a total of 22 trees/tree groups to be removed as part of the proposed works. Of the trees/groups to be removed, 18 were assessed as Category C, three were assessed as Category B and one tree was assessed as a Category U tree.

Tree Preservation Order

4.3 There are four tree Preservation Orders (TPO's) located within the vicinity of the site boundary. The first is a tree group located outside the north-western corner of the site. The second is a woodland group located along the western boundary. The fourth is a field maple located within a woodland block along the southern boundary. And the fourth is an elm tree located on the eastern site boundary.

4.4 All TPO trees are to be retained as part of the proposed works. Please see Figure 1 below for the specific location of the TPO's onsite.

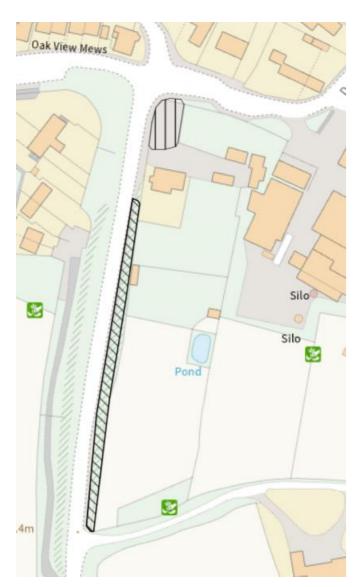


Figure 1 – Tree Preservation Orders onsite

<u>Pruning</u>

- 4.5 The following trees/groups will require pruning in order to facilitate the development onsite:
 - G2 removal of 2.5m section to enable footpath link to Denford Road.
 - G4 pruning required to south-east & south-west of group.
 - G6 removal of northern section to provide access road, pruning required area north of T23.

- G8 pruning required to northern part of group.
- G11 pruning required to northern part of the group situated along the bottom of the bank.
- G12 pruning required to northern part of the group situated along the bottom of the bank.
- G14 pruning required to the north-west section of the group.
- G15 pruning required to the north-east section of the group.
- T20 southern crown reduction of 1.2m.

Ecological Constraints

4.6 Due to the poor physiological condition of Tree T29, it is considered that this tree provides a moderate roosting potential for bats.

5.0 IMPACTS

- 5.1 There are a total of 22 trees/groups to be removed as part of the proposed works. Of the trees/groups to be removed, 18 were assessed as Category C, three were assessed as Category B and one tree was assessed as a Category U tree.
- 5.2 Mitigation recommendations have been provided for the replacement planting of the trees to be removed as part of the works. A total of 24 new trees will be planted as part of the landscape scheme.

6.0 MITIGATION PROPOSALS

Tree Protection Measures

- BS 5837 specifies that a Tree Protection Plan (TPP) should be prepared to show the impact of the proposed development on existing trees at the site. Please see Appendix B.
- 6.2 Information from the TPP should be incorporated into subsequent drawings and method statements to ensure that all interested parties are fully aware of the areas in which access and works may and may not take place.
- 6.3 The following protection measures have been recommended for all construction works where excavation or other activities could impact on retained trees.
- 6.4 Trees growing in open countryside well away from buildings or structures can accommodate many weaknesses and defects with very little risk to the public. Once developments or infrastructure are constructed near-by, the risk of damage or injury increases. There is one Category U tree located within the site which may pose a potential risk if retained unless remedial safety work is undertaken. This tree should be subject to a more detailed safety survey prior to the commencement of construction.

Construction Exclusion Zone (CEZ)

- 6.5 During construction, care must be taken to ensure that the existing ground levels around trees are maintained as trees are sensitive to any changes in water level or factors which alter the aeration of the root system.
- 6.6 As a general guide, the full root protection area (RPA) should be observed, and BS 5837 adhered to.
- 6.7 BS 5837 states that all retained trees should be protected by RPAs marked by the erection of a protective barrier. The Tree Constraints Plan and the Tree Survey Schedule shows the RPA for each tree or group of trees.
- 6.8 BS 5837 specifies the minimum RPA in square metres rather than a radial distance; the final barrier position will be shown on the TPP.

- 6.9 BS 5837 enables the professional arborist to make small changes to the shape (but not the area) of the RPA to fit with local conditions.
- 6.10 The TPP should also detail routes for services and site facilities.
- 6.11 If services need to pass through the CEZ, directional drilling or thrust boring techniques must be employed at a suitable depth (≥ 1 metre) under the trees. This will minimise damage to tree roots. Any works which need to take place within the CEZ must be notified to the project arborist in advance. The project arborist should produce a suitable arboricultural method statement for the works and may recommend that the work is undertaken under a professional watching brief.

Protection Measures for Retained Trees

- 6.12 Retained trees will require ground protection around their RPA using a combination of barriers and ground protection.
- 6.13 Heras fencing should be installed in order to protect the RPA of retained trees.
- 6.14 The barrier fencing must be strong enough to protect the trees from the expected level of construction activity and should be constructed so that it cannot be easily moved.
- 6.15 Once the exclusion zone has been protected by barriers and/or ground protection, construction work can commence. All weather notices must be erected on the barriers stating *"Construction Exclusion Zone KEEP OUT"*. It is recommended that the protective fencing is erected under the supervision of an arborist to ensure that adequate protection is provided.
- 6.16 The location of protective barriers will need to be shown on the TPP. Once the protective fencing is in place it should be inspected by the project arborist, who should then inform the local authority tree officer that the erection work has been completed.

Other Protection Measures

- 6.17 Other protection measures to be considered during construction include:
 - Notice boards, telephone cables or other services should not be attached to any part of the tree.
 - Fires should not be lit within 5 metres of any tree trunk, branch or foliage.
 - No materials or rubbish should be left within the CEZ.

Utilities

6.18 Where supply of any underground utilities passes through the RPAs of retained trees, BS 5837:2015 recommends that detailed plans should be drawn up in conjunction with an appropriately qualified arboriculturist.

General activities

6.19 Many of the activities which occur on construction sites are potentially damaging to trees. These include the location of site huts, parking arrangements, the storage of materials, the storage of rubbish, and the movement and operation of plant. It is important to understand the range of potentially damaging activities that might occur onsite at an early stage so that these possible conflicts are recognised and can be mitigated for. Therefore, areas designated for site huts, parking and storage of materials should be identified prior to the commencement of works.

7.0 CONCLUSIONS

- 7.1 Kedd Limited have been commissioned to undertake arboricultural assessment of the trees located within the proposed residential development for land off Denford Road, Ringstead.
- 7.2 This assessment was required in order to update previous arboricultural assessment conducted by the Mayhew Consultancy in 2023.
- 7.3 There are a total of 22 trees/groups to be removed as part of the proposed works. Of the trees/groups to be removed, 18 were assessed as Category C, three were assessed as Category B and one tree was assessed as a Category U tree.
- 7.4 Mitigation recommendations have been provided for the replacement planting of the trees to be removed as part of the works. A total of 24 new trees will be planted as part of the landscape scheme.
- 7.5 There are four tree Preservation Orders (TPO's) located within the vicinity of the site boundary. The first is a tree group located outside the north-western corner of the site. The second is a woodland group located along the western boundary. The fourth is a field maple located within a woodland block along the southern boundary. And the fourth is an elm tree located on the eastern site boundary. All TPO trees are to be retained as part of the proposed works.
- 7.6 Mitigation recommendations have been provided within section 6 above.

- CIRIA (2019) Biodiversity Net Gain. Good Practice principles for Development

 A Practical Guide
- Ian Crosher A, Susannah Gold B, Max Heaver D, Matt Heydon A, Lauren Moore D, Stephen Panks A, Sarah Scott C, Dave Stone A & Nick White A. 2019. The Biodiversity Metric 3:1 Auditing and Accounting For Biodiversity Value. User Guide (Beta Version, July 2019). Natural England (A – Natural England, B – Imperial College, University Of London, C – Environment Agency, D – Department For Environment, Food And Rural Affairs)
- 3. National Planning Policy Framework (2021) [online]

APPENDIX A

Tree Survey Schedule

TreeNo	Species	Ht. Stemdia.	RPARad	RPAArea	Column7	Crown spreadN – S – E - W	Column9	Column10	СВ	Ageclass	Phycon	Strcon	ECR Class	Observations & recommendations
	Cypress	12	30	4	41	As per plan	Cordining	condimitizo		Semi-mature		Good	20-40 C	Established offsite row on top of the adjacent bank.
	Cypress	12	30	4	41	As per plan				Semi-mature		Good	40+ C	Established prominent to road.Generally unexceptional.
	Cypress	14	30	4	41	As per plan				Semi-mature		Fair	20-40 C	Unexceptional small lineargroup.
	Mixedbroadleavedand evergreen	15	35	4	55	As per plan					Fair	Fair	20-40 C	Mixed group of semi matureplanting adjacent northern bank.Individually unexceptional butcollectively notab
	Mixedbroadleavedand	13	25	3	28	As per plan				Semi-mature	-	Fair	20-40 B	Individually unexceptional butcollectively prominent understory on highway bank.
		12	25	5	20	As per plan			vai .	Semi-mature	Fall	Fall	20-40 B	individually directed to a bucconectively prominent and estory of highway bank.
	evergreen.	8	30	4	44	A			Maria	C	Card	E e i e	40+ B	Description of the description of a second section of the description of the best of the second section of the
	Mixedbroadleaved	8	30	4	41 55	As per plan					Good	Fair		Prominent hedgerow to road onbank. Contains dead elm whichshould be removed.
	Thorn x3	0		•		As per plan			-	Mature	Good	Good	20-40 B	Prominent to road. Ivy to crown.
	Mixedbroadleaved -mainly fieldmaple	13	25	3	28	As per plan					Good	Good	20-40 B	Fenced area of relatively youngplanting. Now established. Ivy tocrowns of many.
	Thorn	7	25	3	28	As per plan			-	Mature	Poor	Poor	20-40 C	Thorn densely smothered withivy.
	Thorn	7	25	3	28	As per plan					Poor	Fair	20-40 C	Densely covered in ivy andclematis.
	Mixedbroadleaved	7	20	2	18	As per plan			-	Young	Fair	Fair	20-40 C	Young self set broadleavedtrees along top of bank.
	Mixedbroadleaved	14	30	4	41	As per plan				Semi-mature		Fair	20-40 B	Group of semi mature self settrees on top of bank. Ivy tocrowns of larger trees.
	Mixedbroadleaved	8	40	5	72	As per plan					Good	Good	40+ B	Linear group including thorn and off-site line of young lime trees.
	Sycamore x 2and poplar	17	50	6	113	As per plan			Var S	Semi-mature	Good	Fair	20-40 B	Good established off-site group.
G15	Mixed species	6	30	4	41	As per plan			Var I	Mature	Fair	Fair	20-40 C	Mixed species understorygrowth much of which coveredin ivy.
T1	Willow	14	110	13	547	8 7		6	84 I	Mature	Fair	Fair	20-40 B	Established stream side tree.Displaced stem leans to south.
T2	Sycamore	14	40	5	72	4 5	:	8	55 5	Semi-mature	Good	Good	20-40 C	Established but unexceptional.
Т3	Sycamore	14	40	5	72	5 5	(6	4 1.5	Semi-mature	Good	Good	20-40 C	Unexceptional tree ivy to crown.
T4	Sycamore	14	40	5	72	5 4		5	62 9	Semi-mature	Good	Good	20-40 C	Unexceptional tree. Ivy to crown.
Т5	Sycamore	13	110	13	547	6 5	:	5	62 9	Semi-mature	Fair	Fair	20-40 B	Multi stemmed at base. Denseivy to crown. Only B due toprominence to road.
Т6	Sycamore	9	30	4	41	16		4	2 2 .	Semi-mature	Fair	Fair	10-20 C	Unexceptional tree. Ivy to crown.Crown deflected by adjacentcypress group.
Т7	Sycamore	10	30	4	41	5 5		4	4 4	Semi-mature	Fair	Fair	20-40 C	Unexceptional tree. Dense ivy tocrown.
Т8	Apple	9	35	4	55	6 4		5	44 1	Mature	Fair	Fair	20-40 C	Established but unexceptionalapple tree.
	Apple	5	20	2		2 2		2	24	Mature	Good	Poor	10-20 C	Poor ivy-covered tree.
	Svcamore	14	35	4		6 5					Good	Good	20-40 C	Established but essentially unexceptional semi mature tree. Ivy to stem.
	Yew	9	49	6		5 4		-		Mature	Good	Fair	20-40 C	Established tree. Upright crown, perhaps thin due to adjacentdrive construction.
	Sycamore	9	25	3		3 3				Young	Good	Good	10-20 C	Unexceptional self set sycamoreadjacent shed.
	Apple	4	15	2		2 2		-		0	Fair	Poor	10-20 C	Unexceptional small apple.
	Cypress	13	50	6		2 5		_		Semi-mature		Good	40+ C	Established tree on group edge, but essentially unexceptional.
	Yew	6	35	4		3 4		-	-	Semi-mature		Fair	20-40 C	Established but deflected crowndue to adjacent group.
	Silver birch	14	35	4		2 4		-		Semi-mature		Fair	20-40 C	Deflected crown and windblowbranch damage.
	Cypress	14	25	3		2 4		•		Semi-mature		Fair	40+ C	Established but unexceptionalgroup edge tree.
	Ash	12	30	3		4 4		-		Semi-mature			20-40 C	Established but unexceptionalgroup edge tree.
	Ash Oak	12	55	4		6 4		-				Good	20-40 C 40+ B	
				/ 				-			Good	Fair		Ivy to crown. Spreading crowndivides at 3m.
	Atlantic cedar	16	30			5 4		5			Good	Fair	40+ B	Established tree within roadsidehedge.
	Deodar cedar	16	75	9		71		-			Good	Good	40+ B	Twin stemmed at base. Canopydeflected.
	Cypress	16	30	4		3 3		5			Good	Good	40+ B	Established tree prominent toroad on top of bank.
	Field maple	12	59	7		77		,	-	Mature	Good	Good	40+ B	Good established standard treein hedgerow.
	Sycamore	12	40	5		5 5		-	-		Good	Good	20-40 B	Prominent to road. Dense ivy tocrown.
	Field maple	7	79	9		5 6		•		Mature	Good	Good	40+ B	Good free standing field maple.lvy to crown.
T26	Deodar cedar	7	20	2		3 3	:	3	3 1.5	Young	Good	Good	20-40 C	Established but unexceptional.
T27	Norway maple	8	39	5	69	6 5	!	5	4 2 .	Semi-mature	Good	Good	40+ C	Good established young tree ontop of bank.
T28	Ash	14	55	7	137	6 6		8	74 9	Semi-mature	Good	Good	40+ B	Good established tree. Ivy tocrown. Historic stem damage atbase to east. On top of bank.
T20	Apple	5	35	4	55	3 3		4	32 I	Mature	Poor	Poor	<10 U	Mature tree with significant limbloss and decay.
T29														

APPENIDX B

Arboricultural Constraints and Protection Plan

KD.RNG.1.ED.002



LEGEND



Site Boundary



Existing Trees & Hedgerows to be Retained



Existing Trees & Hedgerows to be Removed



T1 Tree / Hedgerow References



PROJECT:

Development at Raunds Road / Spencer Street, Ringstead

TITLE:

Arboricultural Contraints & Protection Plan

REF NO:

KD.RNG.1.ED.002

DATE:	SCALE:	
August 2023	1:1,000 @A3 / 1:500 @A1	
STATUS:		
FINAL		IN

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