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28th July 2017

Newton Flotman Parish Council
c/o Julie King
Parish Clerk

Re: Kings Green, Newton Flotman, report reference 17.07.03.

Dear Julie,

Further to receiving instructions via e-mail to inspect the trees on Kings Green, please find the enclosed tree schedule and sketch plan following the recent survey of the trees. Recommended works are in green typeface and I have enclosed a separate sheet, listing the recommended work.

The survey was of a preliminary nature from ground level only.

This survey should not be considered as a definitive report suggesting that the tree stock is safe. Trees are dynamic living organisms and are therefore subject to constant change. The observations and advice within the schedule are based on observations made during the survey. In many cases it was not possible to fully ascertain the structural integrity of the trees due to hindered visibility by other trees and leaf cover. Extreme weather conditions are also considered outside the scope of the survey and its findings. The survey is intended to assess the hazards posed by the trees and propose reasonable control measures to contain the risk of harm in each given circumstance. Please refer to our Terms and Conditions which have been sent to you for further information.

Also enclosed is a copy of the risk assessment template used (THREATS), for your information. Further details are available from:

<http://www.flac.uk.com/wp-content/uploads/2010/07/THREATS-GN-June-2010.pdf>

Only the trees shown on the plan and included within the survey schedule were assessed.

Given the very low occupancy rate of The Green, I would suggest the trees are re-inspected within 5 years. However, should anything untoward be noticed by representatives of the Parish Council, members of the public or the grounds maintenance team, the opinion of a suitably qualified and experienced tree professional must be sought.

If anything needs clarifying, please do not hesitate to call.

Yours sincerely,

Robert Thackray M.Arbor.A, Dip.Arb. (RFS), Tech.Cert. (Arbor.A)

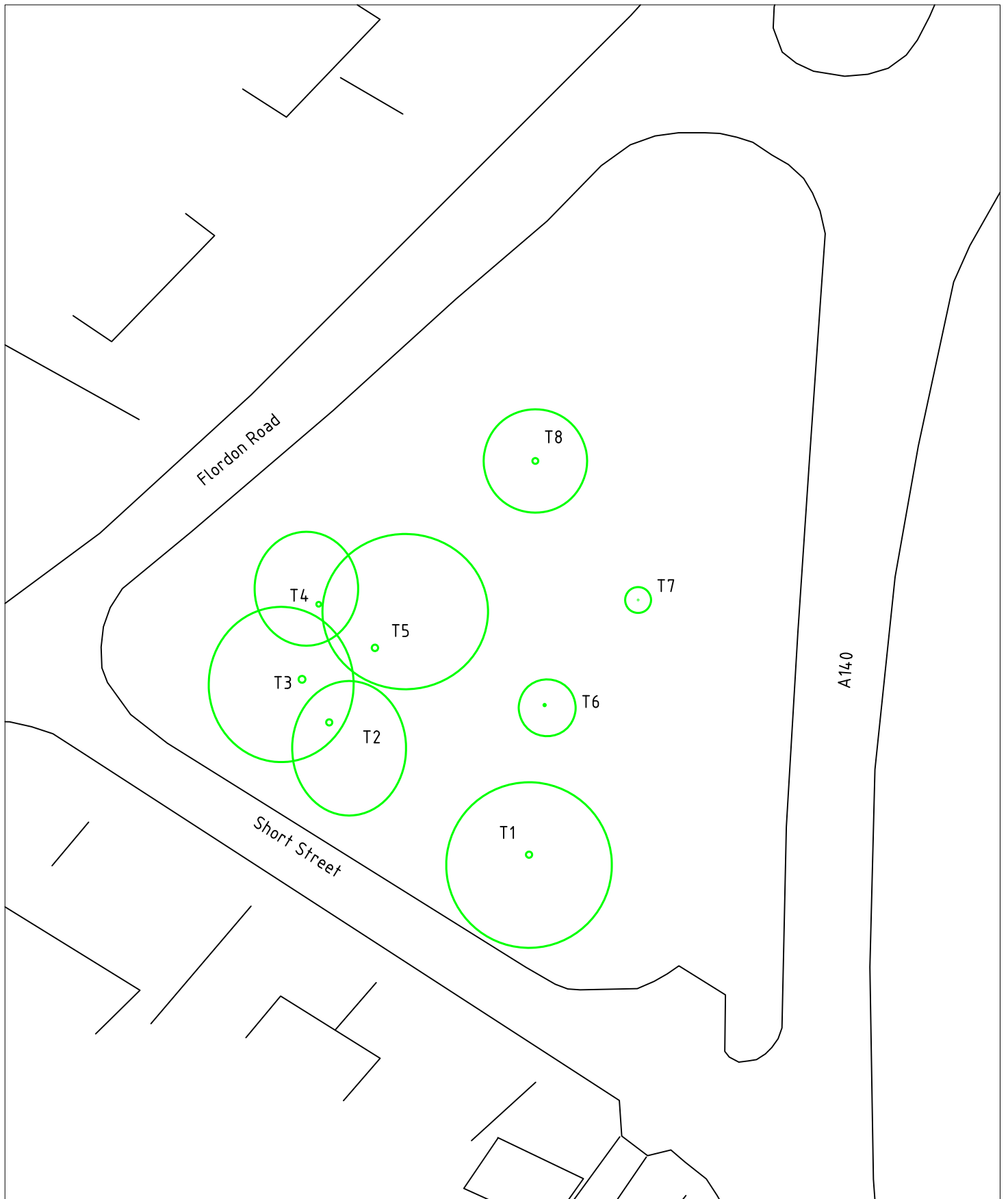
For and on behalf of Robert Thackray Limited.

Explanatory notes for the tree schedule.

Tree No.	Gives the relevant tree number as shown on the enclosed site plans. T = tree.	
Species	Given in common or botanical terms.	
Height	To the nearest meter as estimated.	
Diameter	Of the trunk, rounded to the nearest 10mm as measured. The measurement was taken at approximately 1.3 metres from ground level or just above ground level if followed by ' g/l '	
Branch spread	Of the tree's crown, to the nearest half metre as measured or estimated. Given in compass quadrants from the trunk.	
Height of crown clearance	Clearance between the lowest point of the tree's crown and adjacent ground level, as estimated.	
Age class	As estimated, Y = young, SM = semi-mature, EM = early mature, M = mature OM = over mature.	
Health	An indication of the tree's health and vitality, expressed as good, fair, poor or dead.	
Structural condition	An indication of the tree's structural condition, expressed as good, fair, poor or ' D ' indicating that the tree is dangerous.	
THREATS analysis	Failure score	A figure indicating the chance of failure, where 0 is none, up to 50 being imminent.
	Target score	A figure indicating the value of the target, where 0 is none, up to 40 being very high.
	Impact score	A figure indicating the chance of damage and consequences, where 1 is superficial damage up to 10 being severe structural damage and/or fatalities.
	Total	The three figures multiplied to give a score which is used to inform an appropriate response. Please refer to the guidance notes for further information.
Comments & observations	<p>General comments</p> <p>Ivy and other vegetation will limit visibility of potential defects. "\emptyset" = diameter. "m" = metres, "mm" = millimetres "inclusion" or "included union" = a poorly formed join between branches or between a branch and a trunk. "minor deadwood" = deadwood of little significance generally under 25mm in diameter. "leader" = principle or dominant upward growing shoot. "group effect" = where trees are growing closely together, often with asymmetric crowns. "occlusion" or "occluding" = the tree natural response to wounding Any dimensions of cavities, wounds etc. will be given as width x height</p>	
Most hazardous potential defect observed	Part of the tree deemed most at risk of failing and used for the THREATS analysis. If there is no specific area for concern, a general term will be used, e.g. 'minor branch failure' for the part deemed most probable to fail, given prevailing conditions.	
Recommendations	Recommended work (if any)	
Timescale	Recommended timescale in which to complete the work.	

Tree No.	Species	Height (m)	Diameter (mm)	Branch spread		Height of crown clearance (m)	Age class	Health	Structural condition	THREATS analysis				Comments and observations	Timescale for works (Months)
				(m)	(m)					Failure score	Target score	Impact score	Total		
T1	Norway maple	12	600	N	7	1.5	M	Good	Fair	2	7	1	14	<p>•phone lines to the south •wide spreading form with heavy low branches •exposed surface roots with mower damage • Coprinellus micaceus (Glistening ink cap) mushrooms at base to the south, not considered significant •deadwood and hanging branches up to 50mm Ø •Deadwood falling •Remove deadwood</p> <p>Recommendations</p>	36
				E	8										
				S	9										
				W	8										
T2	Oak	13	600	N	4	1.5	EM	Good	Fair	2	7	1	14	<p>•group effect •deadwood up to 100mmØ within inner crown</p> <p>Deadwood falling</p> <p>Remove deadwood</p>	36
				E	7										
				S	9										
				W	4										
T3	Oak	14	670	N	7	1.5	EM	Fair	Fair	2	7	1	14	<p>•group effect •some tight branch unions •deadwood within inner canopy up to 75mmØ •foliage appears to be yellowing</p> <p>Deadwood falling</p> <p>Remove deadwood</p>	36
				E	5										
				S	8										
				W	9										
T4	Oak	13	460	N	7	1.5	EM	Fair to Poor	Fair	2	7	1	14	<p>•scrappy appearance •deadwood up to 100mmØ •small hanging twig at 10m to the west •group effect</p> <p>Deadwood falling</p> <p>Remove deadwood</p>	36
				E	4										
				S	4										
				W	6										
T5	Norway maple	14	620	N	11	1	M	Good	Fair to Poor	2	7	4	56	<p>•6x surface roots 150mmØ with mower damage •girdling roots to the N, E & S •heavy branching to the N •group effect •minor damage to western buttress root •branch tear-out to S at 3m, 600 x 200mm, occluding well •scattered minor deadwood •small patch of dead bark on lowest limb to E, 2.5m from the trunk •branch formation poor but not especially included •various bark splits, including c.75mm from branch unions suggesting reactive wood development •bark splits on main secondary branches • lowest branch to E has split 1.2m long from the union with the trunk on upper side of branch, with watery exudation, beginning to occlude.</p> <p>Eastern branch breaking</p> <p>Reduce weight on the eastern branch by reducing it back to the 4th side branch from the trunk, c. 6m from the trunk</p>	12
				E	10										
				S	4										
				W	6										

Tree No.	Species	Height (m)	Diameter (mm)	Branch spread		Height of crown clearance (m)	Age class	Health	Structural condition	THREATS analysis				Comments and observations	Timescale for works (Months)
				(m)	(m)					Failure score	Target score	Impact score	Total		
T6	Copper beech	8	210	N	2.5	1	Y	Good	Good	0.8	7	1	6	•Golden Jubilee memorial planting. Small branch loss Remove 6 lowest branches to encourage crown development	36
				E	3										
				S	3										
				W	2.5										
T7	Oak	3	50	N	1.25	0.5	Y	Good	Good	0.8	7	1	6	•Diamond Jubilee memorial planting •maple sapling within cage No current hazard Remove maple sapling and remove low branches to 1m	36
				E	1.25										
				S	1.25										
				W	1.25										
T8	Horse chestnut	6	470	N	5	2	M	Poor	Poor	2	7	1	14	•dead top, c.200mmØ •one branch has already snapped from the dead top •historic and current bacterial canker infections and bleeding cankers •question over long term survival •yellowing foliage •Deadwood falling. •Remove deadwood	36
				E	5										
				S	5										
				W	5										



Do not scale. All positions to be checked on site. To be read in conjunction with the tree schedule reference 17.07.03

Title Tree survey		Robert Thackray Ltd. 59 Muriel Road Norwich NR2 3NY	
Client Newton Flotman Parish Council	Date July 2017	Drawn by RT	01603 455331
Project Kings Green, Newton Flotman	Drawing No 17.07.03 D1	Scale Not to scale	robert@rthackray.co.uk



Work schedule for Kings Green, Newton Flotman as surveyed. July 2017

Tree No. & species	Recommended work	Reason	Timescale (months)
T1 – Norway maple	Remove deadwood	Deadwood	36
T2 – oak	Remove deadwood	Deadwood	36
T3 – oak	Remove deadwood	Deadwood	36
T4 – oak	Remove deadwood	Deadwood	36
T5 – Norway maple	Reduce weight on the eastern branch by reducing it back to the 4 th side branch from the trunk, approximately 6 metres from the trunk.	The branch has a split on the upper side and reducing the weight will help prevent the whole branch failing	12
T6 – copper beech	Remove the lowest 6 branches	To allow suitable crown development	36
T7 – oak	Remove the maple sapling and remove low branches to a height of 1 metre	To prevent the maple competing with the oak and to allow suitable crown development	36
T8 – horse chestnut	Remove deadwood	Deadwood	36

Where removal of deadwood is specified, branches under 25mm in diameter are not considered to pose an unacceptable hazard and it is not suggested that such small diameter deadwood need be removed.

All tree work is to be in accordance with British Standard 3998 (2010) Tree Work – Recommendations or as updated.

I have made an on-line check to ascertain the legal protection of the trees (<http://my.south-norfolk.gov.uk/mysouthnorfolk.aspx>). It appears that the trees are not within a Conservation Area, nor does it appear that there are any Tree Preservation Orders (TPO) on any of the surveyed trees. It is strongly recommended that the Local Planning Authority (LPA) (South Norfolk Council) are contacted to check for any restrictions before any tree work is undertaken.

TREE HAZARD: RISK EVALUATION AND TREATMENT SYSTEM - THREATS

PART I: TREE INSPECTION RECORD

1] Survey details

Surveyor details (initial on completion)			
Origin, date and time of inspection request		Survey date & time	
Weather conditions	At log	At site	
Other notes			

2] Description of tree

Owner if known													
Tree no. if applicable		Location											
Species		Age class (circle)	Y	MA	EM	M	OM	V	Size category (circle)	S	M	L	VL
Other notes													

3] Description of failure indicators (Circle Item no. to identify defect scored in Part II; always score most hazardous defect)

Item	Indicators	✓	Hazards	List defect and target details
1	Altered exposure		Tree vulnerable to windthrow/storm damage due to e.g. loss of companion	
2	Unstable root plate		Tree at imminent risk of toppling	
3	Root damage		Tree topples. Compare damage with failure criteria: $R:R_w$. Also consider health loss	
4	Root decay (fungi)		Tree vulnerable to windthrow/toppling, possibly without further warning (see 3)	
5	Stem/limb decay (fungi)		Stem/limb fracture causing crown elements to collapse (consider type of decay)	
6	Inadequate stem taper		Failure risk due to e.g. excessive crown raising or D/h deficiency	
7	Target cankers		Possible weakening/failure of affected area, especially if located on stem 'hot spot'	
8	Exudates		Indication of (internal) disorder; if from lower stem, Honey Fungus infection?	
9	Stem hollow, decayed, cracked inc. shear cracks		Stem fracture/buckling, causing crown to collapse. Consider $t:r$ value	
10	Lapsed pollard		Re-growth epicormic in origin & possibly weakly attached; possible decay at knuckles	
11	Overweight, subsiding, or lion-tailed limbs		Limb failure due to an excess of mass over strength or to end-loading	
12	Bark congestion		Fibre buckling of leaning/subsiding area indicating possible forthcoming collapse	
13	Reactive growth		Member fails if repair (reactive growth) unsuccessful in stabilising defect	
14	Inclusive bark		Fork fails causing leader/limb to fall	
15	Fractured limbs; storm damage		Broken limbs/hanging breaks could fall; crown destabilised: further failures likely	
16	Bark necrosis		Cambium death causing xylem dys-function: affected area dies, decays & fails	
17	Dieback; poor foliage		Dead areas become unsafe. Various biotic and abiotic causes; roots damaged?	
18	Dead wood		Branches fall	
19	Prolific ivy		Possible obscuration of defects and excessive winter sail area	
20	Other/None (specify)			

PART II: RISK EVALUATION SUM NB: Examples given in sections 4-6 & 9 are neither prescriptive nor exclusive

4] Failure Score

Consider identified defects in relation to species/clone history, established failure criteria & time of year

Score	✓	Likelihood of failure	Example indicators
50		Imminent/Immediate	Uprooting; Extreme root loss; Collapsing structure (i.e. primary failure has already occurred)
8		Probable/Soon	Altered exposure; Primary decay fungus; Severe inclusive bark/root loss; Fragile dead wood
2		Likely, foreseeable	Lapsed pollard; Overweight/subsiding limbs; Poor stem taper; Dieback
.8		Potentially with time	Early development of inclusive bark; Robust dead wood
0		None apparent	No significant defects observed

5] Target Score

Consider impact radius of identified defect against potential targets. Consider forward visibility available to drivers (Poor Forward Visibility / Good Forward Visibility) & whether vehicles are likely to be stationary, e.g. at junctions. If targets liable to include unsupervised children &/or the elderly or infirm, upgrade target value by one category. **For railway targets use THREATS NR**

Score	✓	Value	Static target examples	Target occupancy examples
40		Very high	Building 24 hour use	Constant vehicular traffic/busy playground
25		High	Building 12 hour use, ≥11Kv power lines	Frequent vehicular traffic/constant pedestrian use
20		Medium	Building/structure occasional use, <11Kv lines	Peak times traffic/intermittent use, PFV, e.g. commuter run
15		Low	Garage, Summer house, Listed wall	Occasional traffic/sporadic use, GFV e.g. quiet rural road
7		Very low	Unlisted wall, paving, garden features	Infrequently used access/public right of way/bridleway
0		None	Grass	Hardly ever used, e.g. remote path

6] Impact Score

Consider height of fall/momentum & whether e.g. lower branches would impede agent's descent

Score	✓	Degree of harm and consequences (examples)	Agent: trees, mm, or branches, kg (NB size/weight for guidance only)		
10		Severe structural damage, vehicles crushed – passenger fatalities very probable	VL	> 750mm	> 500kg
6		Moderate structural/ severe vehicle damage – fatal/disabling injuries likely	L	350-750mm	50-500kg
4		Minor damage/probable disabling/hospitalising injury to pedestrians	M	100-350mm	10-50kg
1		Fragile objects destroyed, superficial/recoverable injury to pedestrians	S	< 100mm	< 10kg

7] Risk Evaluation Sum:

FAILURE SCORE _____ X TARGET SCORE _____ X IMPACT SCORE _____ =

PART III: IMPLEMENTATION OF CONTROL MEASURES

8] Appropriate Response

The use below of the word 'within' should not be taken to mean that delay is necessarily acceptable

Score range	✓	Threat Category	Recommended action & Completion deadline	Code
4000+		7- Extreme	Evacuate/prevent access to impact site, emergency call-out of contractors	E
2001-3999		6- Serious	Close site if practical; arrange for work to be completed within 7 days	7D
1000-2000		5- Significant	Arrange for work to be completed within four weeks maximum	4W
330-999		4- Moderate	Remediate within 13 weeks, reinspect after SWE meantime (inc. gales to Force 7+)	13W
160-329		3- Slight	Reinspect annually /after storms (Force 10+), expect to schedule work within 2 yrs	A
50-159		2- Minimal	Reinspect within 3 yrs if public access, schedule work as required	3Y
0-49		1- Insignificant	Reinspect within 5 yrs if general public access or 3 yrs if child-specific access & TS ≥20	3/5Y

9] Outline of Work Required

Consider amenity and conservation values of tree when selecting control measure

Control measure	✓	Examples	Notes / Work specification
Target management		Target value / vulnerability reduced by exclusion, diversion or relocation: e.g. anti-social planting / fence off & warn; re-route paths; relocate benches	
Further investigation		Decay mapping to establish significance of defect: set results against failure criteria	
Install support		Non-invasive brace to support vulnerable member / dividing union	
Localised pruning		Reduce weight loading on vulnerable limb (including shortening dead branches to retain habitat)	
Limb removal		Prune out dead/damaged/vulnerable growth	
General pruning		Reduce crown by specified amount	
Crown removal		Leave stem as a standing carcass (consider habitat-piling cord wood, preferably in dappled light)	
Tree removal		Takedown and fell to ground level (consider habitat piling & also stump-grinding as a disease reduction measure)	