Adonis Ecology

Review of the Royal Borough of Kensington and Chelsea's "Impact of Basement Development on Biodiversity"

Prepared on behalf of:

Cranbrook Basements
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Contents

Tables

0 SUMMARY

0.1 Adonis Ecology Ltd. was commissioned by Cranbrook Basements Limited to review the Royal Borough of Kensington and Chelsea's biodiversity evidence in support of their Partial Review of the Core Strategy, in particular the document "Impact of Basement Development on Biodiversity" (Royal Borough of Kensington and Chelsea, 2014).

0.2 Overall, it is considered that the "Impact of Basement Development on Biodiversity":

- Argues the case for reducing the extent of garden allowed for basement development from 85% to 50% - it correctly does not appear to expect biodiversity to provide any basis for limiting the depth of basement development;
- Fails to provide any evidence that basements are a significant part of the decline in vegetated area within London (and given the requirement to cover with 1m of soil, it would seem very unlikely that basements are a significant contributor to the decline);
- Correctly acknowledges that the benefit of a garden to wildlife depends on composition of the garden, but then overlooks opportunities for habitat enhancement offered by changing garden composition with basement developments (the vast majority of gardens can be significantly improved for wildlife);
- Overstates the degree of hazard, level of impact and duration of impacts on biodiversity presented by basement developments;
- Overstates significance by failing to clarify impacts on species covered by wildlife legislation, Species of Principle Importance for Conservation in England or local BAP species;
- Presumes that large trees cannot be grown in 1m of soil depth without presenting evidence of this assertion;
- Includes effects on drainage that are not a biodiversity impact;
- Presumes that impacts cannot be adequately avoided, mitigated or compensated for.

0.3 The "Impact of Basement Development on Biodiversity" thus does not provide any evidence that basement developments have reduced biodiversity, nor identify significant potential impacts that cannot be adequately mitigated for under present policy. The report also fails to identify the opportunities for biodiversity enhancement that can be achieved under present policy. Thus there is no reasonable justification from biodiversity for further limiting the extent or depth of basement developments.

1 INTRODUCTION

1.1 Background

1.1.1 Adonis Ecology Ltd. was commissioned by Cranbrook Basements Limited to review the Royal Borough of Kensington and Chelsea's biodiversity evidence in support of their Partial Review of the Core Strategy, in particular the document "Impact of Basement Development on Biodiversity" (Royal Borough of Kensington and Chelsea, 2014).

1.1.2 It is understood that the council are proposing two significant changes, namely to restrict the extent of basement excavation to no more than 50% of the garden or open part of the site, and to limit the depth of excavation to a single storey in most cases.

1.1.3 The objectives of this document are to:

- Determine the validity of the information and conclusions in the document "Impact of Basement Development on Biodiversity";
- Where the information or conclusions are not considered appropriate, provide an alternative reasoned assessment;
- Consider the impacts on biodiversity in the light of the National Planning Policy Framework.

1.1.4 The author of this review has been an ecological consultant assessing impacts of developments (including basement developments) on biodiversity for over 10 years, and is a full member of the Chartered Institute of Ecology and Environmental Management and a Chartered Environmentalist (see CV in Appendix 1).

2 REVIEW

2.1 The Royal Borough of Kensington and Chelsea's "Impact of Basement Development on Biodiversity" Report

Table 1: Comments on "Impact of Basement Development on Biodiversity" report

Report Reference	Content	Comments
1.1	*The current policy allows a maximum extent of basements to under 85% of the garden. This results in digging up virtually the entire back garden with ensuing loss of soil and vegetation.*	Assumes the area being dug up is vegetated, and that the landscape scheme consented for the site allows for decreased vegetation. Current practice is for 1m depth of soil to be put back over basement, and as most biodiversity in top few centimetres of soil, with 80-90% of the widespread rooting structure in the top 0.6m (Forestry Commission, 2014), it is difficult to see that loss of soil below this level is of particular significance to biodiversity.
2.3	*However, the benefit to wildlife will depend on the composition of the garden, such as differing landcovers e.g. grass lawn, paved patio, cultivated flower beds, etc. (Smith, 2005).*	This acknowledges that wildlife value of garden is dependent upon landcovers and planting, which is not controlled by planning. Planning offers an opportunity to enhance biodiversity by conditioning suitably wildlife-beneficial landscaping.
2.4	*Researchers are arguing that it is increasingly imperative that gardens are not viewed as separate entities at the individual scale, but instead managed collectively as interconnected patches or networks of green space acting at multiple scales across the urban landscape (Goddard, et al. 2010).*	Unless homeowner's rights to how they design and manage their garden are to be restricted, the only way to realistically work towards this is through planning permissions that ensure appropriate post-development landscaping. Planning officers can apply landscape conditions to planning permissions where they deem this necessary.

Report Reference	Content	Comments
2.6	*Garden area partly determines the availability of particular landcovers and thus the presence of potential habitat for wildlife (Smith, 2005).*	Garden area does not have to be restricted by basement development. If the basement is 1m below prevailing garden level then garden coverage is unaltered.
3.4	*While this London wide decline may not be linked to basement development. It is considered that in this Borough constructing basements under a maximum of 85% of gardens will involve excavating almost the entire garden. This can change the composition of the gardens permanently and contribute to the further decline in vegetation.*	Presumably the point of this and preceeding paragraphs 3.1 to 3.3 is to make the point that vegetation in London has been declining due to changes in gardening practice and above ground developments. No evidence is presented that basement developments have contributed to this. Changing the composition of the gardens may be for the better, if the post-development landscaping includes species and features of wildlife benefit not previously present, and there is no reason why a basement development should necessarily produce a net decline in vegetation.
4.3	*From an ecological perspective, the main consequence in the short-term (during construction) will be the removal of habitat for micro-organisms, invertebrates, birds, reptiles, amphibians and small mammals.*	The same consequences apply with other types of development and for homeowners choosing to re-landscape their gardens. Potential for impact on protected species (e.g. reptiles) and Species of Principle Importance for Conservation in England should already be assessed as part of individual planning applications and, where necessary, impact avoided/ mitigated /compensated for as with any other development. A change in basement strategy should not be needed to conserve these species.

Report Reference	Content	Comments
4.3	*If the works occurred during breeding or nesting season, the removal of the nesting sites could result in a lost generation and/or severe stress on the breeding animal if they have to reproduce again in the same season. Such disturbance could also result in the breeding pairs abandoning the site never to return. Likewise, in the winter season, the works could disturb hibernating animals (this includes overwintering insects as well as small mammals). The energetic costs of being roused from hibernation are often lethal for the animal as they generally cannot replenish their reserves in the winter months.*	Same issue as for other types of development – this is not specific to basement developments and is not used to restrict the extent of other types of development. The issue is usually addressed for developments by conditions as appropriate to the individual site e.g. works involving removal of bushes or trees likely to support nests have to be undertaken outside of the bird nesting season (typically understood to be March to August inclusive), and where potential for significant hibernating animals (e.g. Hedgehogs) occurs, potential refuges and hibernation sites are destructively searched by an ecologist to ensure animals are not harmed and compensatory features created. No change in basement strategy is needed to achieve this.

Report Reference	Content	Comments
4.4	*The removal and relocation of the soil has a more permanent impact on its micro-organisms and invertebrate populations. If the soil is taken away and redistributed to other sites, potentially in other regions, this will impact on the natural distribution of those animals, which could either lead to their death (if outside their preferred climatic zone) or more worryingly, could lead to introducing them to areas where they will out-compete local fauna. These impacts can be partially mitigated if the same soil that is removed is used to re-cover the same site.*	As with paragraph 4.4, potential for impact on invertebrates or fungi that are protected species or Species of Principle Importance for Conservation in England (e.g. Stag Beetle) should already be assessed as part of individual planning applications and where necessary can be avoided/mitigated/compensated for as with any other development. A change in basement strategy should not be needed to conserve these species. Movement of topsoil is carried out with other types of developments without the potential that basements have to re-use the soil to re-cover the site. This soil movement for other types of developments would therefore have greater impact than for basements – yet this is not considered a reason to restrict other types of developments. To keep this in perspective - note that new soil and soil organisms are introduced to a garden every time a potted plant is purchased at a garden centre and planted out.
Table 1 (Row 1 - Soil)	*Action: Complete Removal*	This is contradicted by paragraph 4.2 …*it is likely that **almost** the entire garden area, **minus the perimeter buffer**, will be dug up….* In other words, not all the soil is dug up, so not complete removal.
Table 1 (Row 1 - Soil)	*Likely Impact: Loss of micro-organisms and invertebrates local to the site*	Since complete removal would not take place (see above), populations of micro-organisms and invertebrates are likely to be retained on site, albeit populations smaller for the duration of construction - so reduction of populations would be likely to occur rather than loss of populations.

Report Reference	Content	Comments
Table 1 (Row 1 - Soil)	*Duration: Permanent*	Once the soil is placed back over the basement, populations of micro-organisms and invertebrates would likely recover – so temporary, not permanent impact.
Table 1 (Row 1 - Soil)	*Significance: Moderate to High*	From the biodiversity point of view, significance would only be moderate to high if a medium to high level of impact on protected species or Species of Principle Importance for Conservation in England (e.g. Stag Beetle) would be likely to occur; this risk should already be assessed as part of individual planning applications and where necessary can be avoided / mitigated / compensated for as with any other development. A change in basement strategy should not be needed to conserve these species. So unless protected species or Species of Principle Importance for Conservation in England were present on site and significantly impacted, given the not complete removal of soil, the likely reduction rather than loss of populations and temporary nature of impact, significance would be low at most.
Table 1 (Row 2- Vegetation)	*Action: Complete/partial removal*	As with Row 1 of Table 1, see paragraph …*it is likely that* ***almost*** *the entire garden area,* ***minus the perimeter buffer****, will be dug up….* In other words, not all the soil is dug up, so not likely to be complete removal of vegetation.
Table 1 (Row 2- Vegetation)	*Likely Impact:* *Loss of feeding sites* *Loss of nesting sites* *Permanent relocation of breeding animals* *Disturbance/ death to hibernating animals*	Potential for impact on protected species and Species of Principle Importance for Conservation in England should already be assessed as part of individual planning applications and where necessary impact can be avoided / mitigated / compensated for as with any other development. A change in basement strategy should not be needed to conserve these species. *Permanent relocation of breeding animals* and *Disturbance / death to hibernating animals* as described by process in paragraph 4.3 can be avoided as described in comments on paragraph 4.3.

Report Reference	Content	Comments
Table 1 (Row 2-Vegetation)	*Significance: Moderate to high* *High*	From the biodiversity point of view, significance would only be moderate to high if a medium to high level of impact on protected species or Species of Principle Importance for Conservation in England (e.g. House Sparrow, Hedgehog or Stag Beetle) would be likely to occur; this risk should already be assessed as part of individual planning applications and where necessary can be avoided / mitigated / compensated for as with any other development. A change in basement strategy should not be needed to conserve these species. So unless protected species or Species of Principle Importance for Conservation in England were present on site and significantly impacted, given the partial removal of vegetation, the likely reduction rather than loss of populations and temporary nature of impact, significance would be low at most.
Table 1 (Row 2-Vegetation)	*Significance:* *High*	Since *Permanent relocation of breeding animals* and *Disturbance/ death to hibernating animals* can be avoided / mitigated / compensated for as described in comments on paragraph 4.3, residual significance would be low.
4.6	*A 1m soil depth will be adequate for most types of vegetation to re-establish, however that soil depth will be severely limiting for the growth of large trees.*	No evidence provided as to why 1m soil depth would be severely limiting for the growth of large trees. While tree roots will extend below 1m, this does not mean large trees cannot grow if they do not grow roots below 1m – volume may be rather more important than depth – see "Representations relating to the RBKC proposal to partially review the Core Strategy Policy CL7 on Basements" from Barrell Tree Consultancy (Barrell Tree Consultancy, 2014).
4.6	*Most homeowners will also avoid planting trees near to the building to avoid disturbance to the ground works from tree roots.*	Whilst homeowners may avoid planting near to buildings where tree roots could affect foundations, the author appears to be implying that a basement extension is included in the type of building that homeowners would avoid planting near. No evidence presented that homeowners would or should avoid planting over basements that extend below the garden.

Report Reference	Content	Comments
4.7	*Although we cannot dictate what homeowners should grow in their private gardens, this action removes the future option and possibility of planting large trees.*	The planning process for basements offers an opportunity, not otherwise present, to enhance biodiversity by conditioning suitably biodiversity-enhancing landscaping post-construction. No evidence presented that large trees cannot still be grown after basement developments with 1m of soil coverage. Evidence is presented by Barrell Tree Consultancy that mature trees can grow in 1m soil depth (Barrell Tree Consultancy, 2014).
4.8	*If homeowners re-landscape their gardens in such a way that the habitats previously there are not replaced, or such that vegetative complexity is not re-introduced, then the temporary impacts from pre-construction become permanent.*	The post-construction landscaping should be taken into account at planning and suitably biodiversity-beneficial landscaping approved or conditioned as with any other type of development. This comment at 4.8 seems to presume that the Local Planning Authority would not follow policy and legal obligations to ensure suitable assessment and mitigation of biodiversity impacts of individual developments.
4.8	*Once again, these impacts may not be severe on a site by site basis but when considered cumulatively, for example, if all plots in a local area were to excavate 85% of their gardens, then the ecological impacts escalate.*	Indeed, if all plots in a local area were to do basement developments up to 85% of their gardens, and the post-construction landscaping required a net biodiversity benefit to be achieved for each, then a substantial long term positive impact on biodiversity may be achieved.
Table 2 (Row 1 – Soil)	*1m covering of soil from a different location*	As the author acknowledges in 4.4, impacts can be mitigated if the same soil that is removed is used to re-cover the same site – so not necessarily from a different location.

Report Reference	Content	Comments
Table 2 (Row 1 – Soil)	*Permanent removal of local species* *Potential introduction of non-local species* *Reduced drainage options*	Not permanent removal. See comments on paragraph 4.4 and on Table 1. As with any other development type involving groundworks and also introducing pot plants that is going on in gardens anyway - see comments on paragraph 4.4 and on Table 1. This should be considered under a hydrological or flood risk assessment – this is not a biodiversity impact.
Table 2 (Row 1 – Soil)	*Permanent*	Not necessarily. See comments on paragraph 4.4 and Table 1.
Table 2 (Row 1 – Soil)	*Significance:* *Moderate* *Moderate* *High to Severe*	 See comments on paragraph 4.4 and Table 1. See comments on paragraph 4.4 and Table 1. Drainage should be considered under a hydrological or flood risk assessment – this is not a biodiversity impact.
Table 2 (Row 2 – Vegetation)	*Replacement with fewer, smaller specimens*	Why? Existing mature trees are currently protected from impact. Suitable landscaping that ensures neutral or net increase in biodiversity can and should be considered at planning application stage or made a planning condition.

Report Reference	Content	Comments
Table 2 (Row 2 – Vegetation)	*Reduction in wildlife feeding opportunities* *Reduction in habitats* *Loss of species diversity and abundance (invertebrates, birds)* *Reduction in cooling and climate mitigation* *Reduction in surface water retention*	Not if suitable post-construction landscaping and biodiversity features agreed at planning or conditioned. Not if suitable post-construction landscaping and biodiversity features agreed at planning or conditioned. Not if suitable post-construction landscaping and biodiversity features agreed at planning or conditioned. Since existing mature trees are protected from impact, and no evidence presented that mature trees and other vegetation cannot be grown afterwards, this does not seem applicable. Drainage should be considered under a hydrological or flood risk assessment – this is not a biodiversity impact.
Table 2 (Row 2 – Vegetation)	*Permanent*	Not necessarily, see above.
Table 2 (Row 2 – Vegetation)	*Significance*	Biodiversity impact of individual developments should be assessed at planning application stage, and suitable post-construction landscaping and biodiversity features agreed or conditioned to ensure no net loss (and ideally a net gain) of biodiversity. As current practice requires 1m of soil over the top of the basement after construction, net biodiversity gain post-construction should be easily achievable for the majority of basements even up to 85% of the garden.
5.1 Conclusion	*In a changing world we should be cautious about removing options that could offer significant benefits in terms of resilience and adaptability.*	No evidence presented that basements significantly reduce resilience and adaptability of the ecosystem. If post-construction landscaping results in more variety and wildlife-friendly planting, then resilience and adaptability can be increased.

Report Reference	Content	Comments
5.1 Conclusion	*Considering the acknowledged impacts that large-scale basements have on the ecology of garden sites, particularly the limitations to grow large trees, measures to restrict/limit basement extents are recommended and deemed prudent.*	Given the supposed biodiversity impacts presented (on soil micro-organisms and invertebrates, and on vegetation) which can be readily mitigated, for even with basements up to 85% of garden area, by suitable conditions attached to individual planning permissions, there seems no reasonable basis from a biodiversity point of view for a blanket limitation on the extent of basements.

2.1.1 Overall, it is considered that the "Impact of Basement Development on Biodiversity":

- Argues the case for reducing the extent of garden allowed for basement development from 85% to 50% - it correctly does not appear to expect biodiversity to provide any basis for limiting the depth of basement development;
- Fails to provide any evidence that basements are a significant part of the decline in vegetated area within London (and given the requirement to cover with 1m of soil, it would seem very unlikely that basements are a significant contributor to the decline);
- Correctly acknowledges that the benefit of a garden to wildlife depends on composition of the garden;
- Overlooks opportunities for habitat enhancement offered by changing garden composition with basement developments (the vast majority of gardens can be significantly improved for wildlife);
- Overstates the degree of hazards presented by basement developments;
- Overstates the level of impact;
- Overstates duration of impacts;
- Overstates significance by failing to clarify impacts on species covered by wildlife legislation, Species of Principle Importance for Conservation in England or local BAP species.

- Presumes that large trees cannot be grown in 1m of soil depth without presenting evidence of this assertion;
- Includes effects on drainage that are not a biodiversity impact;
- Presumes that impacts cannot be adequately avoided, mitigated or compensated for.

2.1.2 A brief assessment of considered basement impacts under current policy and how they may be resolved is presented following.

3 BASEMENT IMPACT ASSESSMENT

3.1 Protected Species

3.1.1 The following table includes the protected species issues considered most likely to be encountered with basement developments in Kensington and Chelsea.

Table 2: Assessment of Basement Development Impacts on Protected Species

Receptor	**Action**	**Impact & Duration**	**Significance & Likely Frequency of Occurrence**	**Impact Avoidance / Mitigation / Compensation**
Roosting bats in trees	Tree removal	Loss of roost – permanent Harm – permanent Disturbance - temporary	High significance, very low occurrence	Mature trees, that could have roosts, have to be retained anyway under current policy. In other cases (e.g. felling for health and safety) mitigation under EPS site licence.
Commuting bats	Tree removal	Loss of commuting habitat and hence potential restriction of access to roosts - permanent	Moderate significance, very low occurrence	Mature trees have to be retained anyway under current policy. In other cases mitigation under EPS site licence.

Receptor	Action	Impact & Duration	Significance & Likely Frequency of Occurrence	Impact Avoidance / Mitigation / Compensation
Common Nesting birds	Removal of bushes and creepers during groundworks	Harm to nesting birds - permanent	High significance, moderate occurrence	Removal of features that could support nesting birds to be outside of bird nesting season, or check for nests by ecologist before clearance.

3.1.2 The issues covered in Table 2 above are common to many types of developments and the impact avoidance and mitigation methods are standard. Note that the likely frequency of impact on bat roosts is very low, and that there are methods for mitigation that can be undertaken, in the rare cases that impact is expected, that would result in expected residual impacts being negligible. The risk to nesting birds can be avoided by using the methods described in Table 2.

3.2 LBAP and Species of Principle Importance

3.2.1 The following Table 3 includes LBAP (Royal Borough of Kensington and Chelsea, 2010) and groups of Species of Principle Importance for Conservation in England most likely to be encountered in basement developments in Kensington and Chelsea.

Table 3: Assessment of Basement Impacts on LBAP and Species of Principle Importance for Conservation in England

Receptor	Action	Impact & Duration	Significance & Likely Frequency of Occurrence	Impact Avoidance /Mitigation/Compensation
Foraging bats	Partial removal of vegetation during excavation	Loss of some foraging habitat - temporary (as likely some planting afterwards)	Low significance, moderate occurrence	Works could be undertaken outside of bat active season, planting undertaken for next active season. Landscaping to include species that support insects suitable for bats.
Hedgehogs	Partial removal of vegetation	Harm - permanent	High significance, low occurrence	Check of potential nesting sites by ecologist before works commence. Works

Receptor	Action	Impact & Duration	Significance & Likely Frequency of Occurrence	Impact Avoidance /Mitigation/Compensation
	during excavation			to commence outside of breeding season.
House Sparrows	Partial removal of vegetation during groundwork	Loss of foraging and some nesting habitat - temporary (as likely some planting afterwards)	Moderate significance, low occurrence	Works could be undertaken outside of bird nesting season, planting undertaken for next nesting season. Include Sparrow Terraces and features.
Stag Beetle	Removal of stumps	Loss of breeding sites - permanent	High significance, moderate occurrence	Stumps in Stag Beetle areas to be translocated with surrounding soil (overseen by ecologist). Loggery to be created post-construction.
Bees (many species)	Partial removal of vegetation and bare ground during excavation	Loss of foraging and breeding sites - temporary (as likely some planting and subsequent recolonisation afterwards)	Low significance, moderate occurrence	Works could be undertaken outside of bee active season, planting of flowering plants and installing bee tubes undertaken for next active season.
Mistletoe	Removal of trees	Loss of specimens - permanent	Low significance, very low occurrence	Mature trees most likely to support Mistletoe protected anyway under current policy. Mistletoe could be seeded onto retained trees.
Gardens	Partial removal of vegetation during excavation	Loss of biodiversity - temporary (as likely some planting and subsequent recolonisation afterwards)	Moderate significance, high occurrence	Landcaping to include plant species of known value to wildlife and include wildlife features (e.g. ponds, bird baths, compost heaps, loggeries, bird boxes, bat boxes, insect tubes)

3.2.2 The issues covered in Table 3 above are common to many types of developments and the mitigation methods are standard. With a 1m covering of soil and post-construction landscaping, basement developments have more potential for mitigation and enhancement of biodiversity than most development types. With the impact avoidance and mitigation methods undertaken, residual impacts would be expected to be negligible.

3.2.3 Since impacts on biodiversity can be avoided/mitigated/compensated for, there is no basis from wildlife legislation or related UK planning policy for reducing the extent of basement developments.

3.2.4 With regard to the future potential of a site for biodiversity, post-construction landscaping could be addressed through planning to ensure that it provides a net biodiversity benefit (e.g. through planting appropriate wildlife-attracting shrub species, bird boxes, bat boxes, loggeries and bee tubes).

4 PROTECTING AND ENHANCING BIODIVERSITY WITH BASEMENT DEVELOPMENTS

4.1 Compliance with Biodiversity in the National Planning Policy Framework

4.1.1 According to the NPPF, sustainable development has an environmental role "contributing to protecting and enhancing our natural, built and historic environment; and, as part of this, helping to improve biodiversity" (Department for Communities and Local Government, 2012).

4.1.2 With the current practice of a 1m covering of soil, basement developments have more potential than most other development types to mitigate for biodiversity impacts.

4.1.3 In the experience of this ecological consultant (who has been involved with a considerable number of developments involving garden spaces) the vast majority of gardens are of very low value for biodiversity compared with their potential. Basement developments therefore offer the opportunity to secure significant biodiversity enhancement through the post-construction landscaping.

4.1.4 Basement developments are therefore in a better position than most development types to comply with the requirements of the NPPF and protect and enhance biodiversity, and effective mitigation and enhancements can be secured through the normal planning application process with current policy. Restricting the extent of basement developments will not remove the need for effective assessment and mitigation of biodiversity impacts, nor will it increase biodiversity enhancement.

5 CONCLUSION

5.1 The “Impact of Basement Development on Biodiversity” does not provide any evidence that basement developments have reduced biodiversity, nor does it provide evidence of any significant potential impacts that cannot be adequately mitigated for under present policy. The report also fails to identify that there are opportunities for biodiversity enhancement with basement developments that can be achieved under present policy. Thus there is no justification from biodiversity for further limiting the extent or depth of basement developments.

6 REFERENCES

Barrell Tree Consultancy (2014). *Representations relating to the RBKC proposal to partially review the Core Strategy Policy CL7 on Basements*. Barrell Tree Consultancy, Fordingbridge, Hampshire.

Department for Communities and Local Government (2012) National Planning Policy Framework. www.communities.gov.uk

Forestry Commission (2014). Woodland and archaeology - impact of tree roots. www.forestry.gov.uk/fr/INFD-5W2LE6

Royal Borough of Kensington and Chelsea (2010) *Local Biodiversity Action Plan 2010/2011 to 2014/2015.* Royal Borough of Kensington and Chelsea, London.

Royal Borough of Kensington and Chelsea (2014) *Impact of Basement Development on Biodiversity*. Royal Borough of Kensington and Chelsea, London.

7 APPENDICES

7.1 Appendix 1: CV of Author of this Report

Richard J. N. Sands

MA MSc CEnv MCIEEM

Qualifications and Professional Memberships

- **MA** previously BA (Hons) Biological Sciences from Oxford University – First Class (plus the Gibbs Book Prize for Zoology awarded by the University)
- **MSc** Marine Resource Development and Protection from Heriot-Watt University – Distinction.
- **CEnv** = Chartered Environmentalist.
- **MCIEEM** = Member of Chartered Institute of Ecology and Environmental Management.

Relevant Experience

Owner Adonis Ecology 2005-2007, Owner/MD of Adonis Ecology Ltd. 2007- Present

- Responsible for ensuring high standards are met for prompt service, keeping clients informed, and enabling clients to successfully undertake their developments in compliance with wildlife legislation and planning policy.
- Experience of managing staff and sub-consultants on a wide range of ecology projects relating to e.g. construction of industrial premises, housebuilding, PFI schemes, wind farms, solar sites, building conversions, basement extensions, mineral extraction and road schemes.
- Undertaken Phase 1 Surveys and botanical surveys, protected species surveys including for newts, bats, reptiles, badgers (Great Crested Newt licence holder and Bat licence holder), invertebrate surveys and monitoring.
- Reports consistently written to high standard including for planning appeals and Public Inquiries.
- Efficient systems put in place to ensure smooth management of projects and quality assurance through ISO 9001:2000.

Consultant Ecologist with RPS 2003-2005

- Managed projects for large and small developments and achieved a high level of client satisfaction.

- Wrote and audited reports and ecology/conservation management plans and reports for Planning Appeal Hearings and Public Inquiries.
- Undertook Phase 1 Habitat, scoping and protected species surveys including for bats, reptiles, badgers, newts and also entomological/invertebrate surveys.
- Contributed chapters to book on standard biodiversity methods for ecological consultants.
- Carried out Great Crested Newt and Medicinal Leech translocation.

Entomologist with Broom's Barn Research Station (part of Rothamsted Research) 1999-2003

- A number of scientific papers and articles published on effects of different crop management techniques on biodiversity.
- Contributed to the writing of standard protocols used in a large project for Defra.
- Managed teams of staff in the field.

Ecology Training for Continuing Professional Development – Some of the Courses Attended

- Phase 1 Habitat Survey IEEM course.
- Introduction to Grasses FSC course.
- Wildflowers of Coasts and Shorelines.
- A Weekend on Badgers FSC course.
- A Weekend on Bats FSC course.
- Otters and other riverside mammals (included Water Vole) FSC course.
- Dormouse Ecology FSC course.
- British amphibians and reptiles FSC course.
- Giving Evidence at Public Inquiry IEEM course.
- Beetles Rothamsted Course.
- Gastropods Rothamsted Course.
- Introduction to management BBSRC course.
- Scientific writing BBSRC course.

- Presentation skills BBSRC course.
- Use of Genstat for statistics BBSRC course.
- First Aid at Work.

A list of publications is available on request.