Written statement for the inspection of Treadgold House under Part 2A of the Environmental Protection Act 1990

1. Introduction

This document provides a written statement, as required by Section 5.2 of the Contaminated Land Statutory Guidance 2012 and records the decision by the Royal Borough of Kensington and Chelsea (the Council) for land used as communal residential gardens at Treadgold House (see Figure 1) under the provisions of contaminated land legislation that came into force in 2000 as Part 2A of the Environmental Protection Act 1990 (as amended) (Part 2A).

In coming to a decision, the Council has considered the investigation and assessment undertaken by AECOM, which is fully reported in the Part 2A Investigation: Treadgold House and Avondale Park Gardens report dated 5 September 2022, which presents the factual and interpretive aspects of the investigation and risk assessment. The final report is available on the Council's website at https://www.rbkc.gov.uk/soil-investigations.

This work followed on from the two stages of additional environmental checks carried out by AECOM in the area following the Grenfell Tower fire. Stage 2 confirmed that the Grenfell Tower fire did not result in contaminated land. The final reports and other information for the previous works are available at https://www.gov.uk/guidance/grenfell-environmental-checks-stage-2-report. This work is therefore separate from the Environmental Checks Programme and forms part of the Council's normal statutory duties to investigate land which may be contaminated through historic use or activity.

2. Decision

As part of its duties under Part 2A, the Council inspected land used as managed communal residential gardens to the south and west of Treadgold House and decided it does not pose a significant possibility of significant harm and so does not meet the definition of contaminated land under Part 2A. The basis for reaching this decision is given below.

The Statutory Guidance supporting Part 2A describes four categories of land:

- Categories 1 and 2 encompass land which poses a significant possibility of significant harm and represents a high risk, resulting in land being formally declared as contaminated land under Part 2A.
- Category 3 land is land where the risks are not low, but nonetheless the [local] authority considers that regulatory intervention under Part 2A is not warranted.
- Category 4 is land posing no or a low risk.

The Council has decided that the land to the south and west of Treadgold House should be placed into Category 4 for adult residents and visiting children on the basis that it poses a low risk to human health for its use as managed communal residential garden from the substances tested. For lead, the land should be placed into Category 3 for children living in ground floor flats that have direct access to the communal garden to the south and west of Treadgold House. The risks here are marginally above a low risk, as defined by Category 4, but still well below Categories 1 and 2, which would represent a high risk. No children are currently living at or have recently lived within any of the ground floor flats at Treadgold House and so the marginally elevated risk to children from lead is currently hypothetical.

For Category 3 land, the statutory guidance states "that placing land in Category 3 would not stop others, such as the owner or occupier of the land, from taking action to reduce risks

outside of the Part 2A regime if they choose". Section 3 below sets out details of actions proposed by the Council to address the slightly elevated risk to children from lead.

3. Summary of site investigation and risk assessment work

The Council commissioned AECOM to undertake site investigation and risk assessment within the managed communal residential garden to the south and west of Treadgold House, as elevated lead concentrations in soil were found during the Grenfell Stage 2 investigation. The work was carried out during the period October 2021 to September 2022 and was overseen by the Council and the National Quality Mark Scheme Suitably Qualified Person (SQP), who oversaw the Grenfell Stage 1 and Stage 2 investigations. The work was also reviewed by the Multi-Agency Partnership.

The works at Treadgold House investigated the risks posed by lead and other soil contaminants from historic sources unrelated to the fire. The works included:

- A walkover survey to agree sampling locations and understand how the land is used.
- Collecting 197 soil samples from 90 hand pit locations.
- Testing all soil samples for lead and selected samples for a range of other heavy metals, polyaromatic hydrocarbons and asbestos. Six soil samples were also tested to understand how lead behaves when soil is eaten (oral bioaccessibility).
- Assessing the risk to human health in accordance with Part 2A.

A large number of sample locations were selected and soil samples collected to provide a sufficient level of information to make confident decisions for both the whole site and also the land immediately outside each ground floor flat. The assessment primarily relates to the ground floor flats 1-10 at Treadgold House, as they back on to the garden. Flats 1-6 have exclusive permitted access to the land that has been inspected, while informal access from the balconies at Flats 7-10 is typically prevented by a barrier.

Figure 1 shows the sampling locations at Treadgold House. Appendix 1 summarises the results of analyses for lead.

The long-term health risks were assessed by calculating average soil concentrations at different depths across the whole and parts of the investigation area and then comparing these with generic and, for lead, site specific assessment criteria based on residential (without home grown produce) and public open space uses. For statistical reasons, lead and a few other substances were compared with the median and geometric mean, rather than the arithmetic mean. Except for lead (see Appendix 1), most concentrations at Treadgold House were below generic screening criteria (GSC) or demonstrated to be Category 4 land, meaning the risk was shown to be low.

Average soil lead concentrations were higher than the GSC and Step 1 and Step 2 site specific assessment criteria, produced for Stage 2 of the Environmental Checks Programme and so further detailed quantitative risk assessment (DQRA) was required in accordance with the Environment Agency Land Contamination Risk Management guidance. For this DQRA, AECOM derived new Step 1 site-specific assessment criteria for Treadgold House, to identify the boundary of low risk for child residents (1060mg/kg) and adult residents (2150mg/kg). Average soil lead concentrations compared to these criteria showed that risks to adults were low. A higher Step 2 assessment criterion (4,530mg/kg) was then derived to identify the minimum concentration at which a significant possibility of significant harm to child residents might exist. Average concentrations of soil lead were substantially lower than this Step 2 criterion, being just above the Step 1 criteria, representative of a low risk. The

Step 2 criterion for children is higher than for the Step 1 criterion for adults as the assessment took into consideration access limitations from flats 7-10, as well as other factors and so better reflects the level at which lead may pose a higher risk.

Indicative lead criteria for short and medium-term (or acute and intermediate) risks to children visiting Treadgold House were calculated. Average concentrations were well below these. There were several more elevated lead levels, for example 38,490mg/kg outside of flat 1 and 18,960mg/kg and 20,630mg/kg outside of flat 9. These more elevated lead levels were found in deeper soils, at depths of 10cm or more and so normally residents using the gardens will not encounter them. Even if residents occasionally encounter soil with higher lead levels, this will not change the assessment.

AECOM considered the level of confidence that may be placed on their assessment and conclusions and concluded “that the land does not meet the definition of contaminated land with a high degree of confidence”.

4. Conclusions

Overall, for the managed communal residential garden at Treadgold House:

- There is no evidence that the soil contaminants investigated were causing significant harm.
- Both long and shorter-term risks to health from soil contaminants are low, with the exception of long-term exposure to soil lead by child residents.
- Soil lead concentrations suggest the long-term risk to child residents from exposure to soil is above – but close to – the boundary of low risk but not close to the concentration above which a significant possibility of significant harm is considered to exist. This provides reassurance that, while the risks to child residents are slightly elevated, they remain close to being low and may in some instances be low. The risk to children living at Treadgold House is currently hypothetical as no children currently live within flats 1-10.
- The lead found in soil is most likely to have been brought onto site when the communal garden was created and so is not a result of the Grenfell Tower tragedy or past historical uses, such as the former brick field which historically occupied the southern area of Treadgold House.
- No further action is required under Part 2A to inspect or remediate soil contamination.
- There is a high degree of confidence with these conclusions.

As a result, the residents of flats 1-10 may continue to use the managed communal gardens without the need for any special precautions, although we recommend the UK Health Security Agency’s guidance for gardening in urban areas is followed by anyone handling soil in an urban environment. The guidance includes general good practice, such as washing your hands and any soiled shoes and clothing after gardening, working or playing in the garden and washing and where necessary peeling homegrown fruit and vegetables.

AECOM recommended that if the way in which the communal gardens are used changes in the future, the Part 2A assessment should be reviewed. This could include changes such as residents undertaking more regular gardening, growing produce in the ground or if the area of plant beds is extended to cover a greater area. Additional precautions may also be

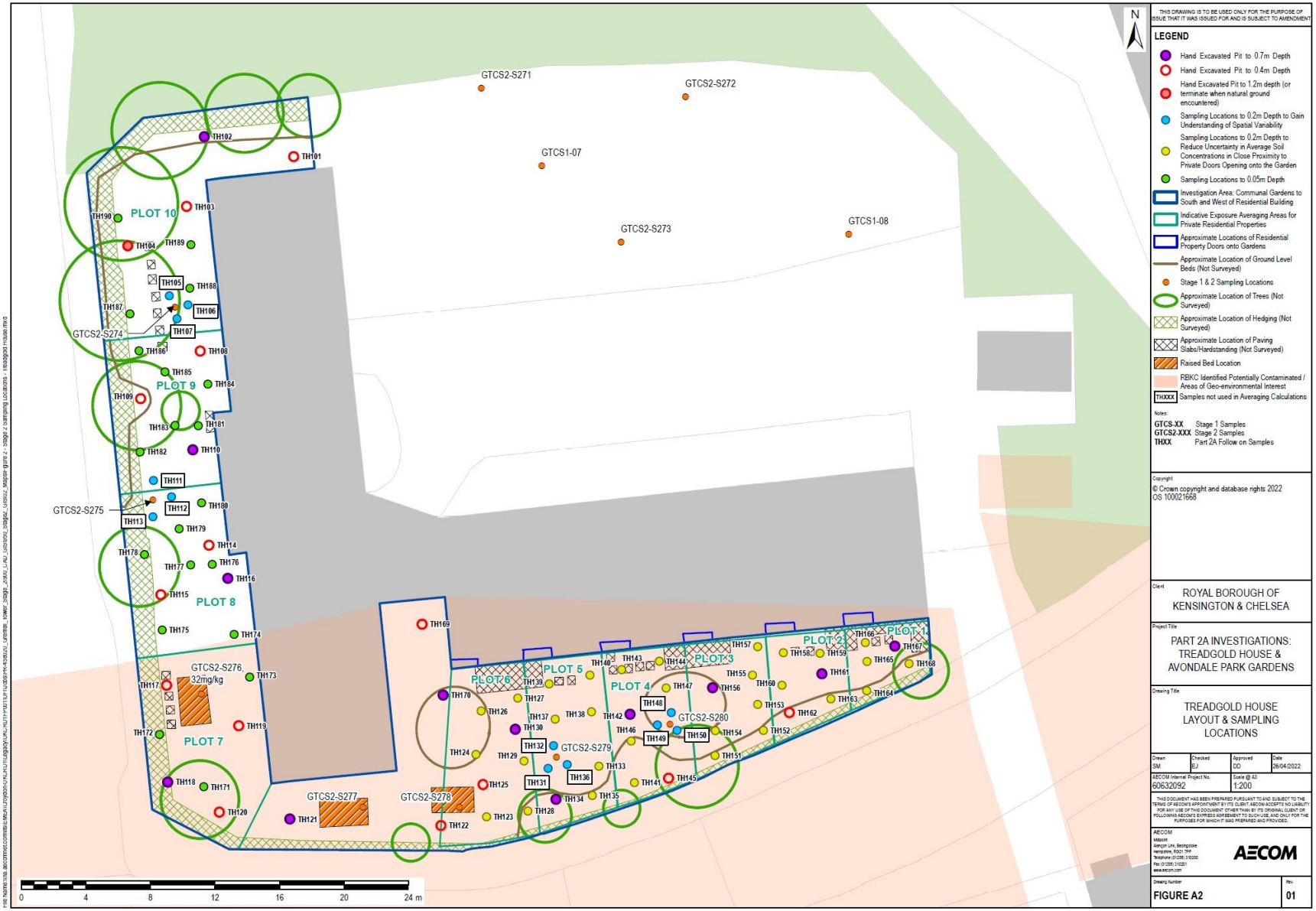
needed for children who are more likely to exhibit pica behaviour, were a child actively eats the soil, for example children with autism.

Treadgold House is to be refurbished, starting in early 2023 and as part of this work the communal gardens are to be upgraded. This is likely to include block wide landscaping with clean soil, and removal of all soil affected by high levels of lead. The Council will ensure that this work is undertaken in line with industry good practice guidance.

LINKS TO FINAL REPORT https://www.rbkc.gov.uk/soil-investigations

SQP DECLARATION https://www.rbkc.gov.uk/media/document/declaration-of-document-adequacy

Figure 1: Site Location Plan



Appendix 1: Summary of lead analyses results

The criteria for children (4,530mg/kg) and adults (2150mg/kg), should be compared to the relevant averages in Table 22 and are most relevant to soils at the depth range 0m-0.05m. For statistical reasons, lead was compared with the median and geometric mean, rather than the arithmetic mean. Plots 1-10 correspond with the land outside flats 1-10 respectively.

Table 22. Lead Exceedances for Treadgold House per Plot

	Depths Ranges (m)	Number of results	Minimum detection (mg/kg)	Median (mg/kg)	Geometric Mean (mg/kg)	Arithmetic Mean (mg/kg)	Maximum detection (mg/kg)
All samples – Treadgold House	0-0.02/0-0.05m, 0.1-0.2m, 0.3-0.4, 0.6-0.7 & 1.1-1.2	201	148	1,381	1,334	1,959	38,490
Plot 1	0-0.05	5	233	925	778	927	1,489
	0.1-0.2	5	148	1,997	1,911	8,774	38,490
	0-0.05 and 0.1-0.2	10	148	1,158	1,334	4,850	38,490
	0.3-0.4	1	-	-	-	-	451
	0.6-0.7	1	-	-	-	-	469
	All	12	148	965	1,036	4,119	38,490
Plot 2	0-0.05	6	1,068	1,586	1,536	1,563	1,941
	0.1-0.2	5	1,329	1,738	2,388	2,836	6,245
	0-0.05 and 0.1-0.2	11	1,068	1,700	1,805	2,141	6,245
	0.3-0.4	2	1,090	1,140	1,138	1,140	1,189
	0.6-0.7	1	-	-	-	-	715
	All	14	715	1,586	1,631	1,896	6,245
Plot 3	0-0.05	7	926	1,415	1,586	1,974	6,029
	0.1-0.2	7	995	2,119	2,169	2,411	3,752
	0-0.05 and 0.1-0.2	14	926	1,589	1,665	2,193	6,029
	0.3-0.4	1	-	-	-	-	1,095
	0.6-0.7	1	-	-	-	-	903
	All	16	903	2,365	1,716	2,044	6,029
Plot 4 – with cluster samples (TH148, TH149 and TH150)	0-0.05	11	584	1,432	1,507	1,673	3,996
	0.1-0.2	9	596	1,766	1,501	1,652	2,434
	0-0.05 and 0.1-0.2	20	584	1,647	1,421	1,664	3,996
	0.3-0.4	2	634	1,738	1,342	1,738	2,841
	0.6-0.7	1	-	-	-	-	685
	All	23	584	1,616	1,439	1,628	3,996
Plot 4 – without cluster samples (TH148, TH149 and TH150)	0-0.05	8	584	1,395	1,466	1,685	3,996
	0.1-0.2	6	596	1,684	1,264	1,414	2,107
	0-0.05 and 0.1-0.2	14	584	1,454	1,376	1,569	3,996
	0.3-0.4	2	634	1,738	1,342	1,738	2,841
	0.6-0.7	1	-	-	-	-	685
	All	17	584	1,432	1,316	1,537	3,996

	Depths Ranges (m)	Number of results	Minimum detection (mg/kg)	Median (mg/kg)	Geometric Mean (mg/kg)	Arithmetic Mean (mg/kg)	Maximum detection (mg/kg)
Plot 5 – with cluster samples (TH131, TH132 and TH136)	0-0.05 & 0-0.02	11	717	1,615	1,491	1,576	2,766
	0.1-0.2	10	994	2,524	2,345	2,809	5,942
	0-0.05 and 0.1-0.2	21	717	1,736	1,590	2,163	5,942
	0.3-0.4	1	-	-	-	-	1,649
	0.6-0.7	1	-	-	-	-	541
	All	23	541	1,692	1,745	2,070	5,942
Plot 5 – without cluster samples (TH131, TH132 and TH136)	0-0.05 & 0-0.02	8	717	1,392	1,410	1,517	2,766
	0.1-0.2	7	994	1,876	2,070	2,568	5,942
	0-0.05 and 0.1-0.2	15	717	1,398	1,687	2,007	5,942
	0.3-0.4	1	-	-	-	-	1,649
	0.6-0.7	1	-	-	-	-	541
	All	17	541	1,398	1,576	1,900	5,942
Plot 6	0-0.05	9	758	1,557	1,679	2,017	6,230
	0.1-0.2	9	661	1,508	1,538	1,755	4,405
	0-0.05 and 0.1-0.2	18	661	1,542	1,559	1,886	6,230
	0.3-0.4	3	526	638	659	673	854
	0.6-0.7	1	-	-	-	-	575
	All	22	526	1,454	1,358	1,661	6,231
Plot 3 to Plot 6 combined (without cluster samples)	0-0.05	32	584	1,424	1,535	1,800	6,230
	0.1-0.2	29	596	1,722	1,724	2,039	5,942
	0-0.05 and 0.1-0.2	61	584	1,508	1,622	1,913	6,230
Plot 7	0-0.05	7	342	1,260	1,182	1,335	2,148
	0.1-0.2	4	192	2,469	1,437	2,206	3,693
	0-0.05 and 0.1-0.2	11	192	1,515	1,209	1,651	3,693
	0.3-0.4	4	550	1,229	1,145	1,269	2,069
	0.6-0.7	1	-	-	-	-	456
	All	16	192	1,257	1,160	1,481	3,693
Plot 8 – with cluster samples (TH111, TH112 and TH113)	0-0.05 & 0-0.02	14	754	1,408	1,373	1,428	2,103
	0.1-0.2	6	935	1,540	1,889	2,220	4,102
	0-0.05 and 0.1-0.2	20	754	1,448	1,563	1,665	4,102
	0.3-0.4	3	1,240	1,407	1,412	1,420	1,612
	0.6-0.7	1	-	-	-	-	1,233
	All	24	754	1,415	1,485	1,617	4,102
Plot 8 – without cluster samples (TH111, TH112 and TH113)	0-0.05 & 0-0.02	11	754	1,525	1,460	1,516	2,103
	0.1-0.2	3	1,473	1,606	2,133	2,394	4,102
	0-0.05 and 0.1-0.2	14	754	1,541	1,584	1,704	4,102
	0.3-0.4	3	1,240	1,407	1,412	1,420	1,612
	0.6-0.7	1	-	-	-	-	1,233
	All	18	754	1,499	1,532	1,631	4,102
Plot 9 – with cluster samples	0-0.05	10	426	1,027	973	1,130	2,871
	0.1-0.2	4	935	4,839	3,182	7,478	18,960

	Depths Ranges (m)	Number of results	Minimum detection (mg/kg)	Median (mg/kg)	Geometric Mean (mg/kg)	Arithmetic Mean (mg/kg)	Maximum detection (mg/kg)
(TH111, TH112 and TH113)	0-0.05 and 0.1-0.2	14	426	1,186	1,435	2,944	18,960
	0.3-0.4	3	991	2,870	3,886	8,164	20,630
	0.6-0.7	1	-	-	-	-	483
	All	23	426	1,186	1,541	3,677	20,630
Plot 9 – without cluster samples (TH111, TH112 and TH113)	0-0.05	9	426	1,042	934	1,142	2,871
	0.1-0.2	3	1,418	8,259	6,055	9,546	18,960
	0-0.05 and 0.1-0.2	12	426	1,259	1,490	3,243	18,960
	0.3-0.4	3	991	2,870	3,886	8,164	20,630
	0.6-0.7	1	-	-	-	-	483
	All	16	426	1,259	1,662	3,993	20,630
Plot 10 – with cluster samples (TH105, TH106 and TH107)	0-0.05 & 0-0.02	12	340	1,295	1,108	1,243	2,748
	0.1-0.2	6	441	899	949	1,125	2,412
	0-0.05 and 0.1-0.2	18	340	1,226	1,247	1,203	2,748
	0.3-0.4	4	309	506	471	488	630
	0.6-0.7	2	150	152	151	152	153
	1.1-1.2	1	-	-	-	-	507
	All	25	150	676	770	977	2,748
Plot 10 – without cluster samples (TH105, TH106 and TH107)	0-0.05 & 0-0.02	9	340	1,168	1,041	1,211	2,748
	0.1-0.2	3	441	609	566	575	676
	0-0.05 and 0.1-0.2	12	340	874	894	1,052	2,748
	0.3-0.4	4	309	506	471	488	630
	0.6-0.7	2	150	152	151	152	153
	1.1-1.2	1	-	-	-	-	507
	All	19	150	630	629	810	2,748