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18 July 2022 **Our Ref: P20-00073**

Mr Sheamus Devine
Meares Group Plc
5 Hepton Court
York Road
Leeds
LS9 6PW

Re: Crossley Street, Gorton Interim Soil Validation Letter Report –Validation of Plots 38-41

Dear Sheamus,

Introduction:

Met Engineers have been contracted by Meares Group Plc to carry out the soil validation works at the above site. The scope of works is based on the Phase II Site Investigation report (ref. 069912-CUR-00-XX-RP-GE-001) by Curtins Consulting Limited dated 17th December 2018, and the subsequent Phase III Remediation Statement (ref. P20-00073-Met-RP-GE-001) by Met Engineers dated 18th February 2022 (Revision 2) to satisfy Manchester City Council Planning Reference: 122797/FO/2019 as amended by 129169/NMC/2021.

The initial intrusive investigation recorded elevated levels of lead, PAH and TPH. Asbestos fibres (<0.001%) were also identified in 1№ of the soil samples tested.

3№ gas monitoring visits were initially undertaken by Curtins Consulting Limited and this confirmed Characteristic Situation (CS) 1 conditions with no gas protection measures proposed. A supplementary gas risk assessment was carried out by Curtins Consulting Limited (ref: 069912-CUR-00-XX-CO-GE-00002-V01_Fee Proposal) in a letter dated 22nd April 2020 which confirmed the gas classification of CS1.

It is understood that the EHO previously raised queries regarding TPH concentrations in TP08 and TP10. In email correspondence provided to Met Engineers Ltd on 29th October 2021, dated between 27th March to 7th April 2020, between Curtins Consulting Limited and Mears Group Plc it was confirmed that the removal of 600mm surface material would effectively remove the contaminated material recorded in TP08 and TP10. It was also confirmed that levels recorded within TP10 do not exceed the relevant guideline values.

In correspondence dated 6th March 2020, The Local Planning Authority stated that due to the above TPH exceedances, a capillary break layer may be required within the cover system.

The client has retained copies of all email correspondence related to the project which can be provided as an addition to this letter report upon request.

Summary of Proposed Remediation:

Based on the findings of the Phase II Site Investigation report, it was proposed to install 600mm of clean capping material as detailed within the Met Phase III Remediation Statement dated 3rd March 2020. Based on the site investigation logs, it was considered likely that the site strip would remove all Made Ground material from the central area of the site where <0.001% asbestos fibres were previously identified in 1№ sample. It was initially proposed to carry out additional sampling around this location following the removal of all Made Ground to confirm no asbestos fibres remained in this area. During the first validation visit carried out by Met Engineers Ltd on 27th October 2021, it was confirmed that nominal amounts of Made Ground remained at the surface in this area, therefore the supplementary sampling was not carried out. Instead, it was confirmed a high-visibility membrane should be installed as a marker layer around the previous WS03 where Made Ground remains.

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At this time, it was also recommended that a high-visibility membrane should be installed in all remaining plots, excluding plots 1-13 and 18-23 which had already been completed at the time of the first validation visit. This was due to the potential for TPH associated with TP08 to remain in the surface soils immediately beneath the proposed 600mm capping layer. Validation of these areas will be carried out over a number of visits, including within this letter report.

Exported Material:

Based on reduced level dig photographs it is determined that sufficient material has been removed from the site within plots 38-41 and the front garden areas of plots 18-23 to facilitate a capping of 600mm of topsoil overlying a high-visibility membrane. Photographs of the site strip and placement of the membrane in these areas are provided in Appendix II.

It has been confirmed by the client that no additional material has been removed from site since the previous site visit. To date, approximately 5,100 tonnes of material have been removed from site as part of the site strip and enabling works; approximately 4,900 tonnes of this material is recorded as spoil, 80 tonnes as stone, 40 tonnes as soil and stone, 40 tonnes as sand and 40 tonnes as contaminated soil. The exported material tickets are provided within Appendix II of the letter report dated 6th December 2021.

Imported Material:

It was proposed to import topsoil material supplied by Cheshire Soils and Aggregates Limited from a site in Halewood, Liverpool, L26 3UA. It is understood from Cheshire Soils and Aggregates Ltd that Halewood is a greenfield site. Confirmation is provided in the email contained within Appendix III of the previous letter report dated 6th December 2021. Based on the requirements Yorkshire and Lincolnshire Pollution Advisory Group (YALPAG) Document – Verification Requirements for Cover Systems it is recommended that for a greenfield/manufactured source 1№ sample per 250m³, or 3№ samples be taken per source, whichever is greater. As such, prior to the material being imported to the site, Met Engineers attended Halewood on 20th September 2021 and collected 11№ samples of the topsoil material. Photographs of this topsoil stockpile are included in Appendix III of the letter report dated 6th December 2021.

These samples were submitted for laboratory testing for Heavy Metals (CLEA 9), Poly Aromatic Hydrocarbons (PAH -USEPA 16), Asbestos, and Soil Organic Matter. The results were screened against Land Quality Management S4UL's for all contaminants except Lead, for which there is no S4UL available. Results for Lead have been screened against DEFRA C4SL's. A conservative soil organic matter content of 1% has been assumed and the guideline values are based on a 'Residential with Homegrown Produce' land use. No exceedances were identified within the topsoil, and the material is therefore considered **suitable for use** at the Crossley Street, Gorton development.

The screened laboratory results and laboratory certificates can be found in Appendix IV and Appendix V of the letter report 6th December 2021 respectively.

It has been confirmed by the client that no additional soil material has been imported to the site since the previous site visit. Met Engineers have been supplied topsoil transfer tickets that show that a total of 2780m³ of this soil has been imported to date. This assumes a conversion of 1 tonne of soil per m³ to provide a conservative frequency of testing for imported material. A summary of all imported tickets to date has been provided in Appendix III of the letter report 18th February 2022.

Summary of 4th Validation Visit – 11.07.22:

It is proposed to carry out the validation works at the above site over a number of visits. This letter report provides the results of the fourth visit, confirming the depth of topsoil placed in the garden areas of plots 38-41. The proposed validation works for the whole site are shown on the plan provided in Appendix I. This plan also shows the locations of the hand dug pits carried out to date.

The rear garden areas of plots 38-41 were previously validated on 15th February 2022, within which 2№ hand dug pits were carried out. The reduced level dig photographs, hand dug pit photographs and

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photographs of the rear garden areas for these plots have been provided in the letter report dated 18th February 2022, within Appendix I, V and VI respectively.

The front garden areas for plots 38-41 were validated by Met Engineers in the most recent validation visit undertaken on 11th July 2022. 1№ hand dug pit (HDP22) was carried out in the front garden area of plot 41, which concluded 600mm topsoil has been placed overlying a high-visibility membrane.

During this visit, an additional 2№ hand dug pits were carried out in the front gardens of plots 18-23. HDP20 was carried out in the front garden area of plot 22, and HDP21 in the front garden area of plot 21, both of which concluded 600mm topsoil has been placed overlying a high-visibility membrane.

The rear garden areas of plots 18-23 were previously validated on 27th October 2021, within which 3№ hand dug pits were carried out. The reduced level dig photographs, hand dug pit photographs and completed garden photographs for the rear garden areas of these plots are provided in the letter report dated 6th December 2022, within Appendix I, VIII and IX respectively.

It is understood that the high-visibility membrane has, to date, been placed in the rear garden areas of plots 14-17, the front garden areas of plots 18-23, and the front and rear garden areas of plots 24-28 and 38-45, and was on this occasion observed at the base of HDP22. In addition, it is understood all remaining plots yet to be completed will be installed with a membrane overlain by a 600mm capping layer of topsoil.

Photographs of the hand dug pits are provided in Appendix III, and photographs of the completed garden areas are provided in Appendix IV.

The remaining plots, including plots 1-2 and 29-41, will be validated in subsequent letter reports. I trust this is acceptable, however if you have any queries, please do not hesitate to contact me.

Yours sincerely,



Yasemin Kolsuz
Geo-Environmental Engineer
For and on behalf of Met Consultancy Group

The following documents are appended to this letter:

- Appendix I - Validation Plan
- Appendix II - Reduced Level Dig Photographs
- Appendix III - Hand Dug Pit Photographs
- Appendix IV - Photographs of Completed Garden Areas

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Appendix I – Validation Plan



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1. Do not scale dimensions from this drawing in either paper or electronic format.
2. To be read in conjunction with all relevant Engineer's, Architect's and Other drawings and specifications.
3. All building products to be used in strict accordance with the manufacturer's recommendations.
4. Any discrepancies are to be reported to the Engineer immediately.
5. Main Contractor to provide a detailed method statement for all works prior to commencement on site.

Completed hand dug validation pit confirming the depth of topsoil placed meets the requirements for capping

Proposed hand dug validation pit (03No. remaining)

Sufficient Made Ground to be removed to leave soft landscaped areas 600mm below final levels. Levels to be made up with clean and certified* imported or re-used subsoil and imported topsoil.

Garden areas in which a membrane has been installed overlain by 600mm of clean and certified imported or re-used subsoil and imported topsoil.

Garden areas in which it is understood a membrane will be installed overlain by 600mm of clean and certified imported or re-used subsoil and imported topsoil.

* All material used within the top 600mm should be tested in accordance with YALPAG Verification requirements for cover systems and Section 4.2 of the Remediation Statement.

Should natural clays be encountered at <600mm during the site strip, these should be tested in accordance with the above guidance to confirm suitability for use within the capping layer

Issue	Date	Drawn	Description	Chk'd
5	11.07.22	AG	Updated with hand dug pits HDP20-HDP22 undertaken on 11.07.22 (plots 18-23 & 38-41)	--
4	14.06.22	YK	Updated with hand dug pits HDP15-HDP19 undertaken on 13.05.22 (plots 24-28 & 42-45)	--
3	18.02.22	YK	Updated with hand dug pits HDP10-HDP14 undertaken on 15.02.22 (plots 14-17 & 38-41)	--
2	05.11.21	YK	Updated with hand dug pits HDP01-HDP09 undertaken on 27.10.21 (plots 3-11 & 18-23)	--
1	03.02.20	AEC	Initial Issue	--

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Client: Mears Group

Project: Crossley Street, Gorton
P20-00073

Title: Validation Plan

Drawn	AG	Checked		Scale
Date	11.07.22	Date		NTS
Status				Original Size A3

Drawing No: P20-00073-Met-GE-001
Version: 5

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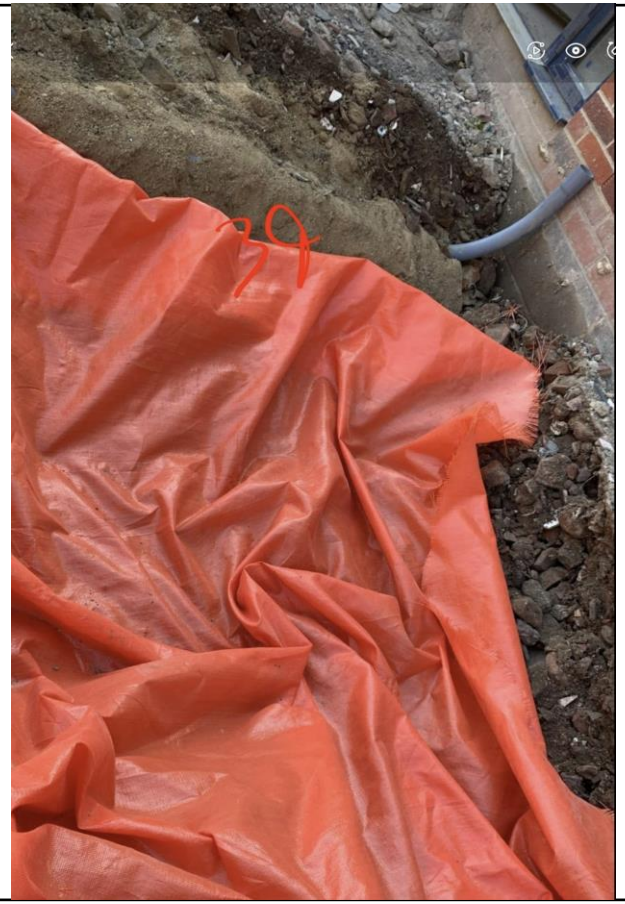
Appendix II – Reduced Level Dig Photographs





Photograph 1: Reduced level dig and membrane within front garden of plot 38.

Photograph 2: Reduced level dig and membrane within front garden of plot 38.



Photograph 3: Reduced level dig and membrane within front garden of plot 39.



Photograph 4: Reduced level dig and membrane within front garden of plot 39.



Photograph 5: Reduced level dig and membrane within front garden of plot 40.





Photograph 6: Reduced level dig and membrane within front garden of plot 41.

Photograph 7: Reduced level dig and membrane within front garden of plot 41.

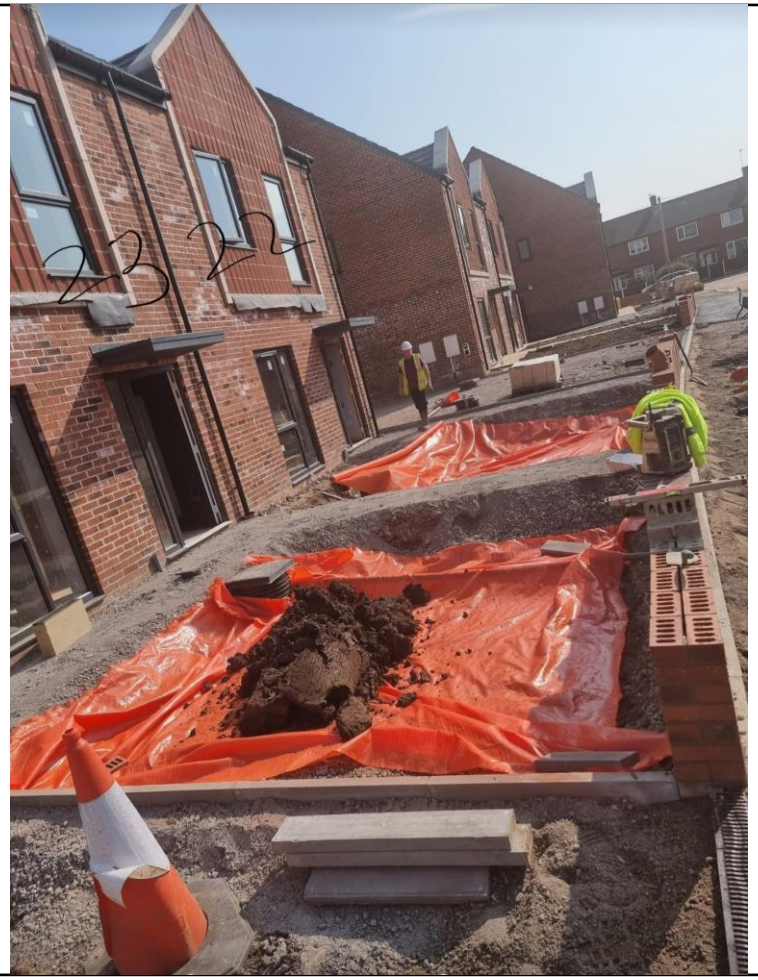




Photograph 8 and 9: Reduced level dig and membrane within front garden of plot 18.



Photograph 10: Reduced level dig and membrane within front garden of plot 19, and reduced level dig prior to membrane placement within front garden areas of plots 20 and 21.



Photograph 12: Reduced level dig and membrane within front gardens of plots 22 and 23.

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Appendix III – Hand Dug Pit Photographs





Photographs 1: Hand dug pit topsoil depth validation – HDP20, Plot 22 (front garden area)

Photographs 2: High-visibility membrane at base of hand dug pit – HDP20, Plot 22 (front garden area)





Photographs 3: Hand dug pit soil arisings – HDP20, Plot 22 (front garden area)

Photographs 4: Hand dug pit location – HDP20, Plot 22 (front garden area)





Photographs 5: Hand dug pit topsoil depth validation – HDP21, Plot 21 (front garden area)

Photographs 6: High-visibility membrane at base of hand dug pit – HDP21, Plot 21 (front garden area)





Photographs 7: Hand dug pit soil arisings – HDP21, Plot 21 (front garden area)

Photographs 8: Hand dug pit location – HDP21, Plot 21 (front garden area)





Photographs 9: Hand dug pit topsoil depth validation – HDP22, Plot 41 (front garden area)

Photographs 10: High-visibility membrane at base of hand dug pit – HDP22, Plot 41 (front garden area)



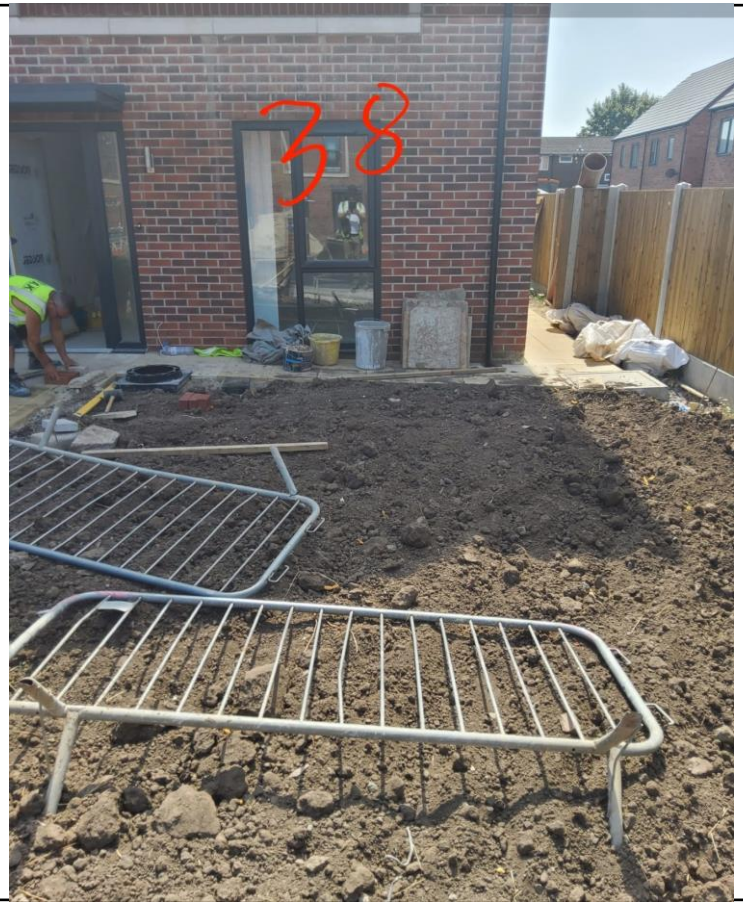


Photographs 11: Hand dug pit soil arisings – HDP21, Plot 21 (front garden area)

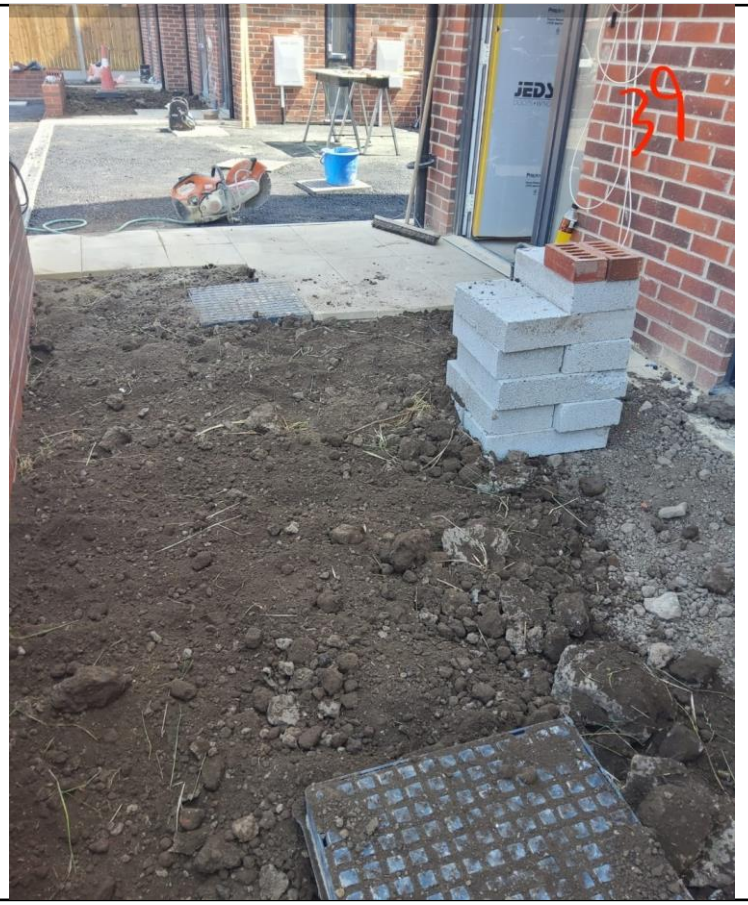
Photographs 12: Hand dug pit location – HDP21, Plot 21 (front garden area)

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Appendix IV – Completed Garden Areas

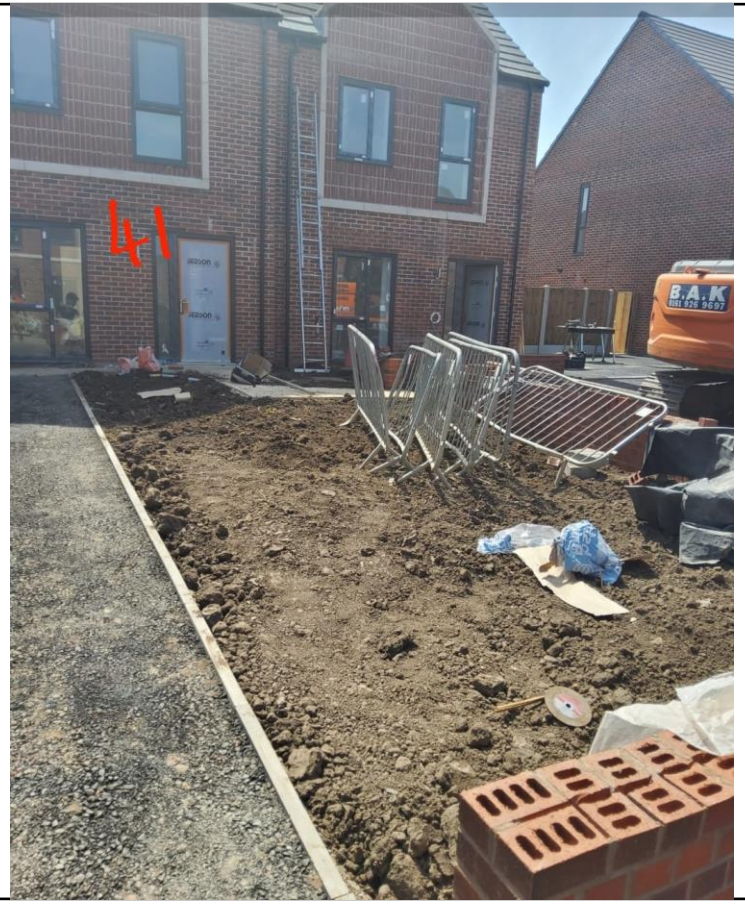


Photograph 1: Completed front garden area of plot 38.



Photograph 2: Completed front garden area of plot 39.

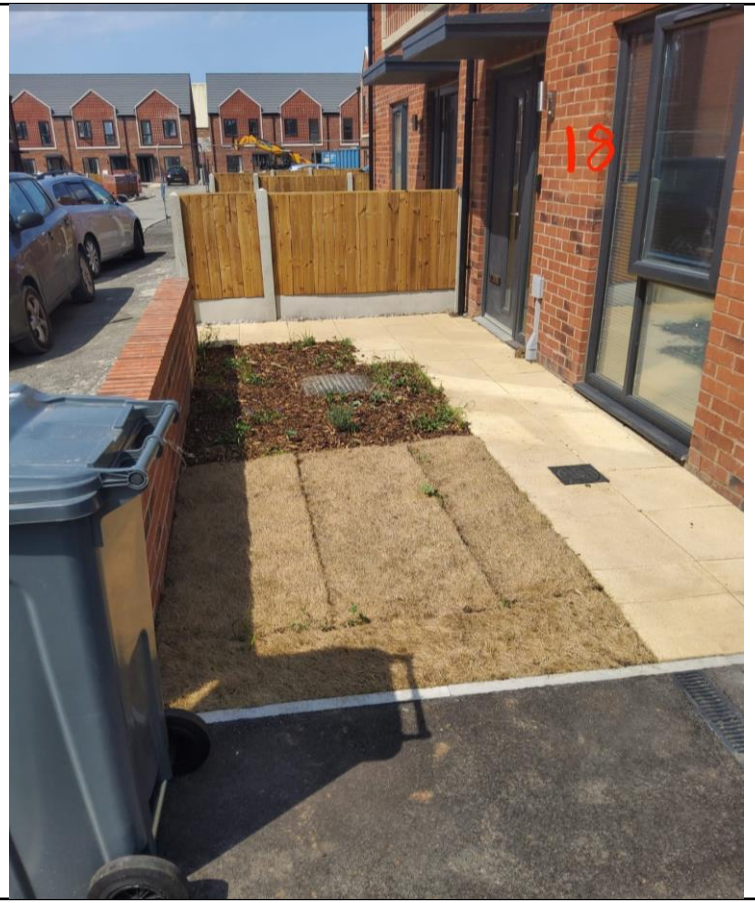




Photograph 3: Completed front garden area of plot 40.

Photograph 4: Completed front garden area of plot 41.

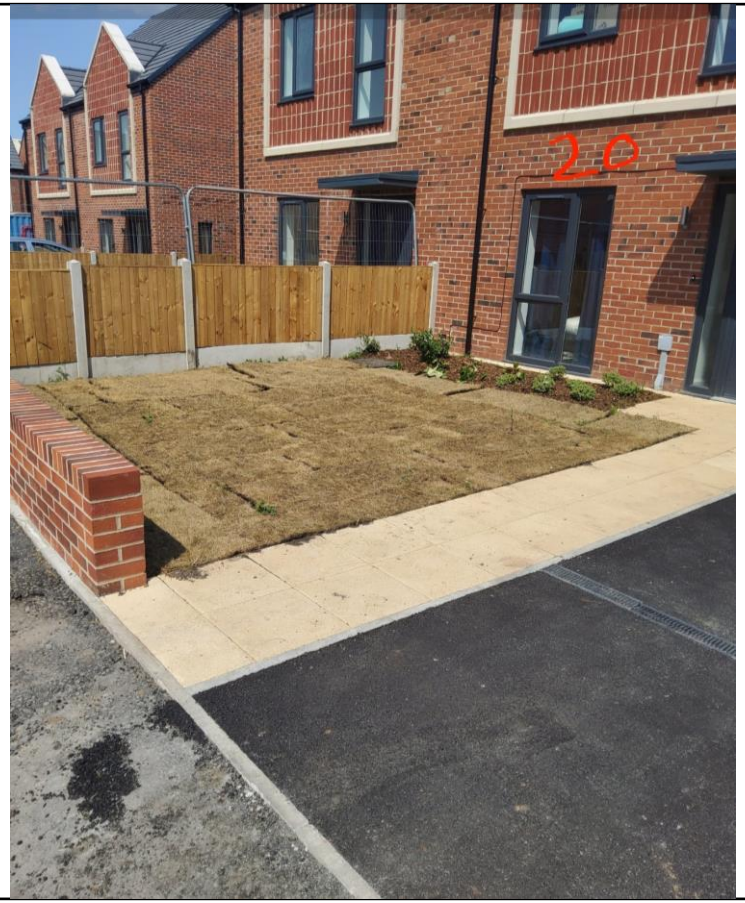




Photographs 5 and 6: Completed front garden areas of plot 18.



Photograph 7: Completed front garden area of plot 19.





Photograph 8: Completed front garden area of plot 20.

Photograph 9: Completed front garden area of plot 21.





Photograph 10: Completed front garden area of plot 22.

Photograph 11: Completed front garden area of plot 23.