

Soarbond Ltd.,
Chartered Civil and Structural
Consulting Engineers and Planners

W.K.J. Zablocki
B.Sc. C.Eng. MICE

London August 2014

Job No1156

Volume and Ratio calculations for

a loft conversion at

40, Helmsdale Close,

Hayes,

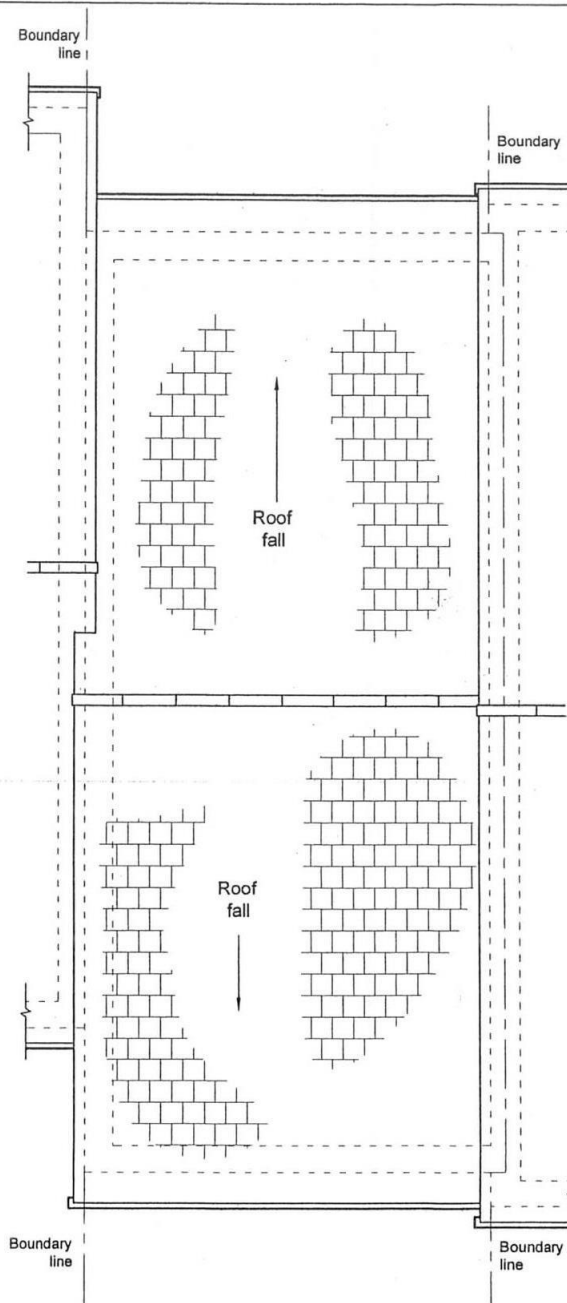
MIDDX. UB 4 9 QS.

A terraced house owned by Mr. Piotr Smietalo.

Index:-

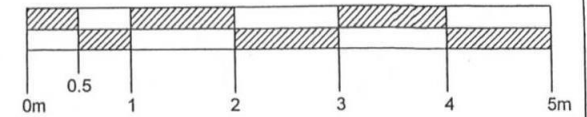
V 01 to V 11 volume calculations.

Project 40 Helmsdale Close, Hayes, UB 4			Job ref 1156	
Part of structure Volume Calculations			Calc sheet no V 1	rev
Drawing ref	Calc by	Date	Check by	Date
Ref	Calculations			Output
<u>1.0</u>	<u>Introduction</u>			
	1.1. 40 Helmsdale Close, Hayes, UB 4 is a single family, terraced house and is situated on the north side of Helmsdale Close, which forms an enclosed, circular "cul de sac" on an estate. It is the penultimate house on this row of houses. These calculations have been prepared to show that the overall increase in roof space is less than 40 m3 as permitted and the requirements for Permitted Development (as SI 2362:2008) are satisfied and a Lawful Development Certificate should be granted for this submission under Class B. There have been no extensions to this 1980's house in the past so this property can claim its full entitlement of permitted development changes to its roof layout. 1.2. The house, at the moment, has two storeys of useable construction. The erection of this future loft addition above the two floors of the main house will form a third floor that will be accessed by new stairs from within the existing stair well. The sketches added to these calculations as V2 to V 8 give the proposed dimensions as this work has still to be carried out. 1.3. These calculations are based on the drawings prepared at 1 : 50 at A3 but reduced by 70 % here to fit into this package as A4 sketches. The drawings have been prepared accurately and have been drawn on AutoCad to 1:1 scale prior to printing. No guarantee can be given that the printed copies are completely accurate yet should be within +/- 3%. 1.4. No scaling of the drawings should be taken as we cannot guarantee that they are exactly to scale after printing. Figured dimensions should be used only. 1.5. A wedge volume is based on half base area multiplied by the perpendicular height and a volume for a pyramid is one third base area multiplied by its perpendicular height to apex. 1.7 The volume of the increased roof is estimated to be 15.0 m3 and we ask if checks are made to allow for 15 m3 extra.			



Existing Roof Plan
Scale 1 : 50

Scale 1: 50



Notes:

1. For general notes see drawing 1156 - 01.



SOARBOND Ltd.

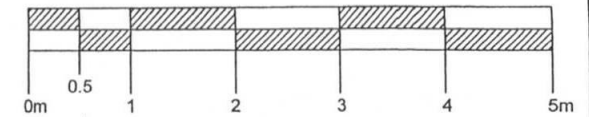
Chartered Engineers
17 Chancery Road,
Eding,
London W1 1AN
tel 020 8917 8863
mobile 07879 583 888
email soarbond@btinternet.com

Job No
Redevelopment at
40 Helmdale Close,
Hayes,
Middlesex UB4 9QS
Drawing No
Existing Roof Plan

Client
Mr. Piotr Smietalo
Drawn by
S. Zablocki
Date
July 2014
DWG
W.K.J. Zablocki
Date
July 2014
Job number
1156
Scale @ A3
1 : 50
Drawing number
1156 - 02

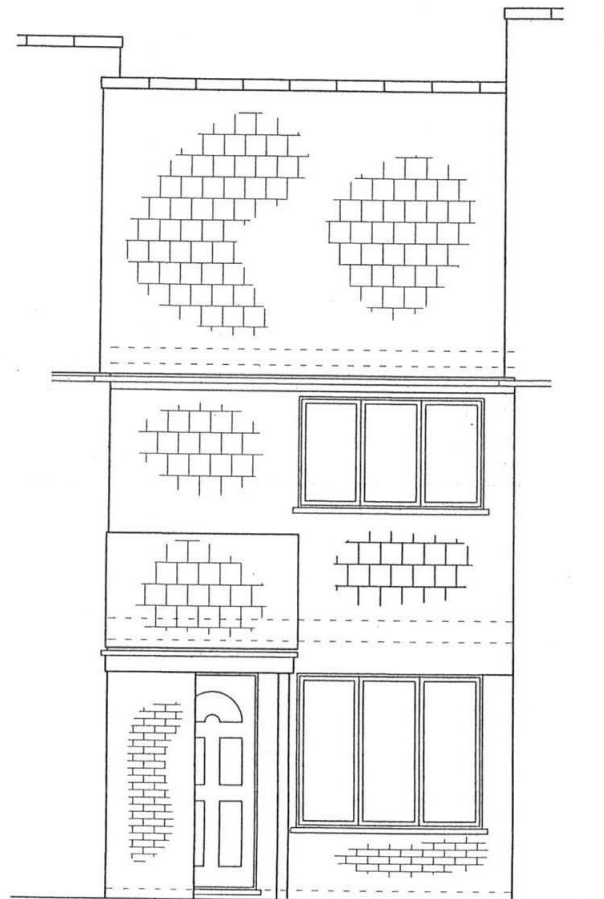


Scale 1: 50

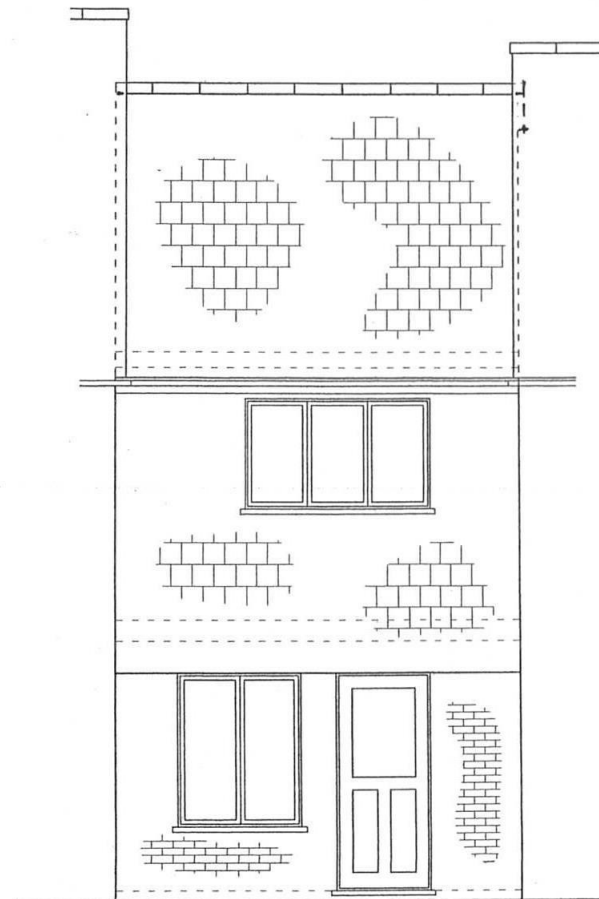


Notes:

1. For general notes see drawing 1156 - 01.



Existing Front Elevation
Scale 1 : 50

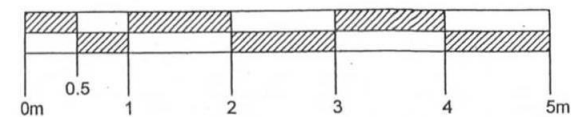


Existing Rear Elevation
Scale 1 : 50



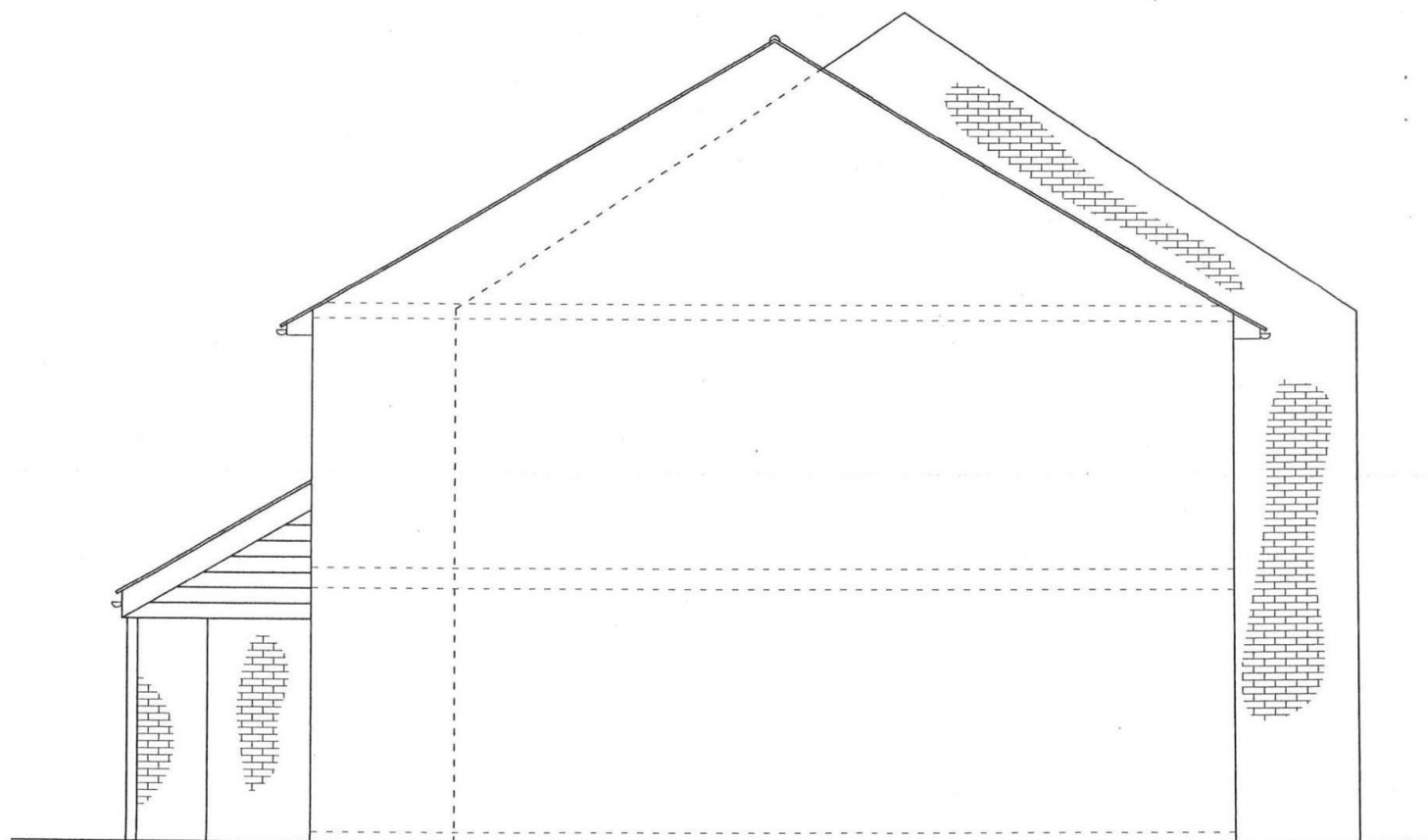
SOARBOND Ltd. Chartered Engineers 17 Chesham Road, Epsom, Surrey, London SE11 1AA	
tel: 020 8957 8663 mobile: 07779 883 900 email: soarbond@soarbond.co.uk	
Job title: Redevelopment at 40 Helmsdale Close, Hayes, Middlesex UB4 9QS	
Drawing title: Existing Front Elevation & Existing Rear Elevation	
Client: Mr. Piotr Smetala	
Drawn by: S. Zablocki	Date: July 2014
CHK'd: W.K.J. Zablocki	Date: July 2014
Job number: 1156	Scale: A3 1 : 50
Drawing number: 1156 - 03	

Scale 1: 50



Notes:

1. For general notes see drawing 1156 - 01.

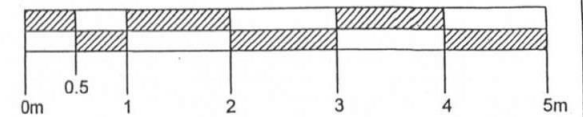


Existing Side Elevation
Scale 1 : 50



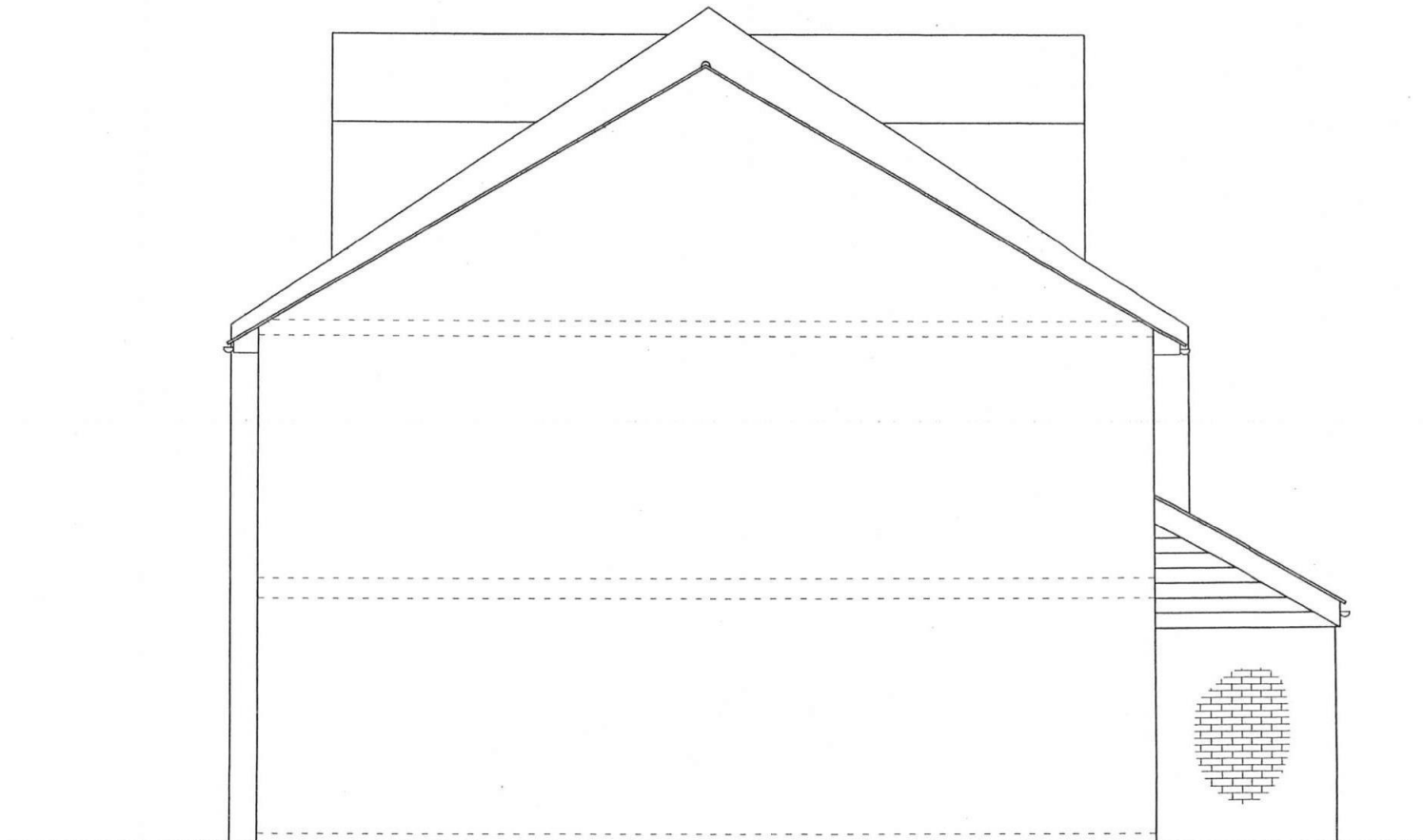
 SOARBOND Ltd. Chartered Engineers 17 Clarendon Road, Epsom, London SW20 1AA Tel: 020 8957 8863 Mobile: 07579 862 806 Email: soarbond@bt.com	
Job title Redevelopment at 40 Helmsdale Close, Hayes, Middlesex UB4 9QS	
Drawing title Existing Side Elevation	
Client Mr. Piotr Smetalo	
Drawn by: S. Zablocka	Date July 2014
Check by: W.K.J. Zablocki	Date July 2014
Job number 1156	Scale 1 : 50
Drawing number 1156 - 04	

Scale 1: 50



Notes:

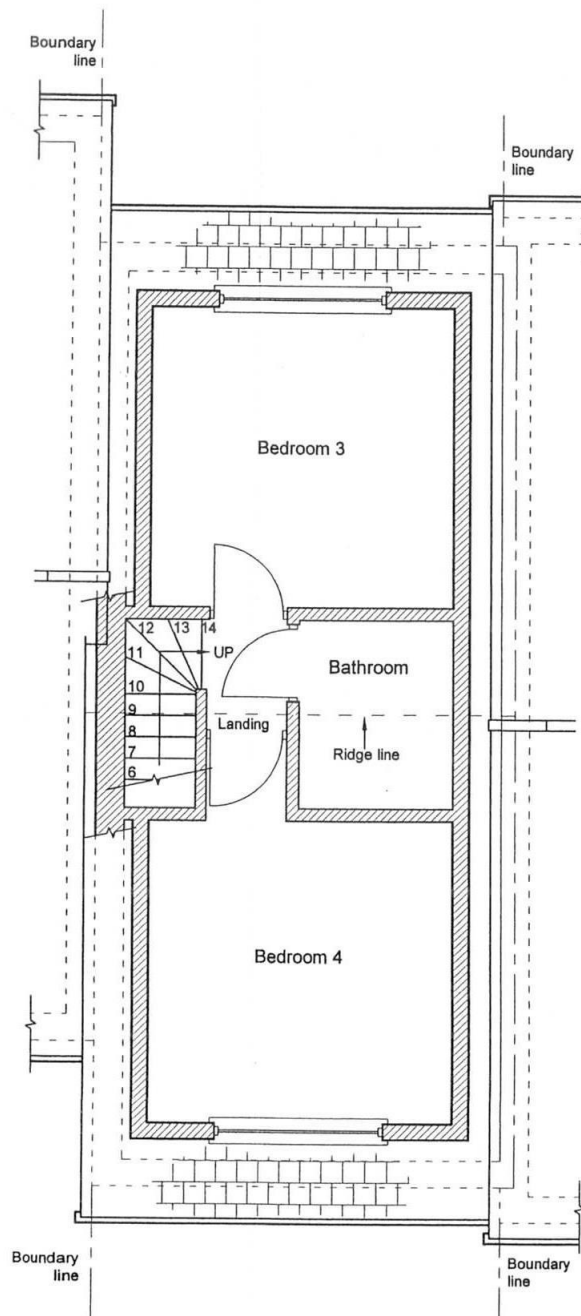
1. For general notes see drawing 1156 - 01.



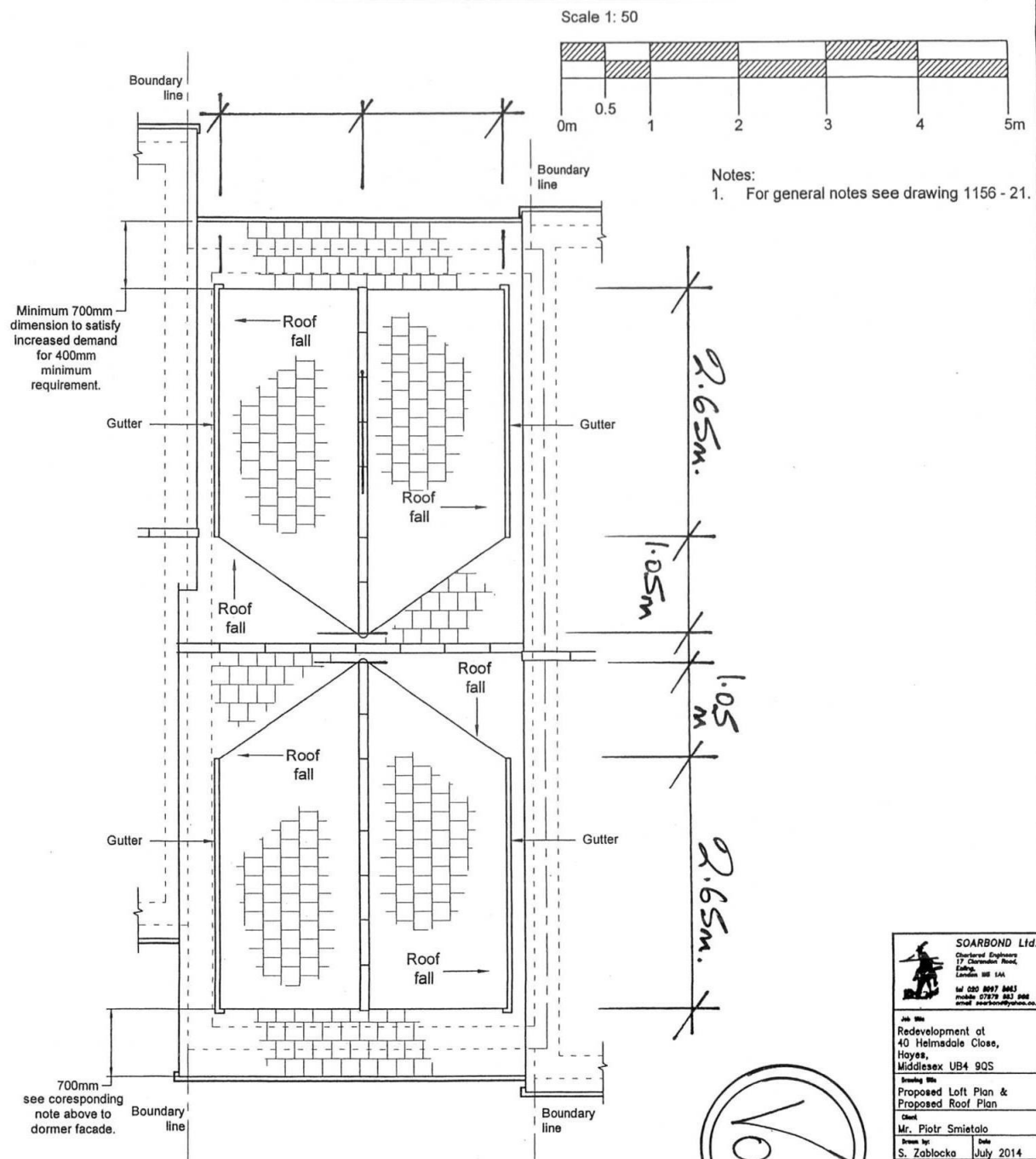
Existing Side Elevation
Scale 1 : 50



SOARBOND Ltd. Chartered Engineers 17 Chancery Road, Leamington, CV34 5AA Tel 01922 8097 806/3 mobile 07579 883 000 email soarbond@btinternet.co.uk	
Job title Redevelopment at 40 Halmesdale Close, Hoyes, Middlesex UB4 9QS	
Drawing title Existing Side Elevation	
Client Mr. Piotr Smetalo	
Drawn by S. Zablocka	Date July 2014
CHK'd W.K.J. Zablocki	Date July 2014
Job number 1156	Scale B A3 1 : 50
Drawing number 1156 - 05	



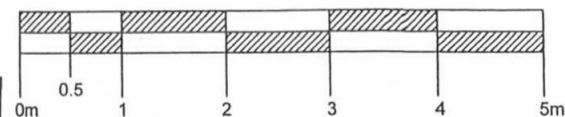
Proposed Loft Plan
Scale 1 : 50



Proposed Roof Plan
Scale 1 : 50

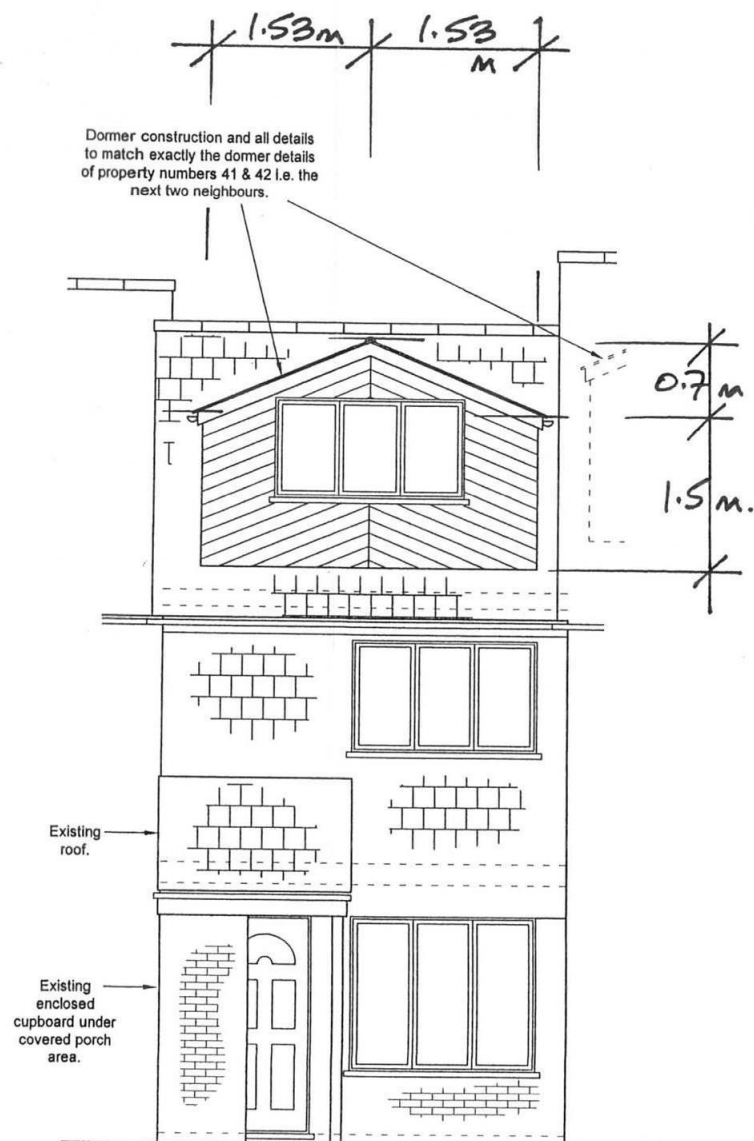
 SOARBOND Ltd. Chartered Engineers 17 Chesham Road, Ealing, London W5 1AA Tel: 020 8997 8663 Mobile: 07779 883 888 Email: soarbond@btopenworld.co.uk	
Job title	Redevelopment at 40 Helmsdale Close, Hayes, Middlesex UB4 9QS
Drawing title	Proposed Loft Plan & Proposed Roof Plan
Client	Mr. Piotr Smetola
Drawn by	S. Zablocki
Date	July 2014
Checked by	W.K.J. Zablocki
Date	July 2014
Job number	1156
Scale	1 : 50
Drawing number	1156 - 22

Scale 1: 50

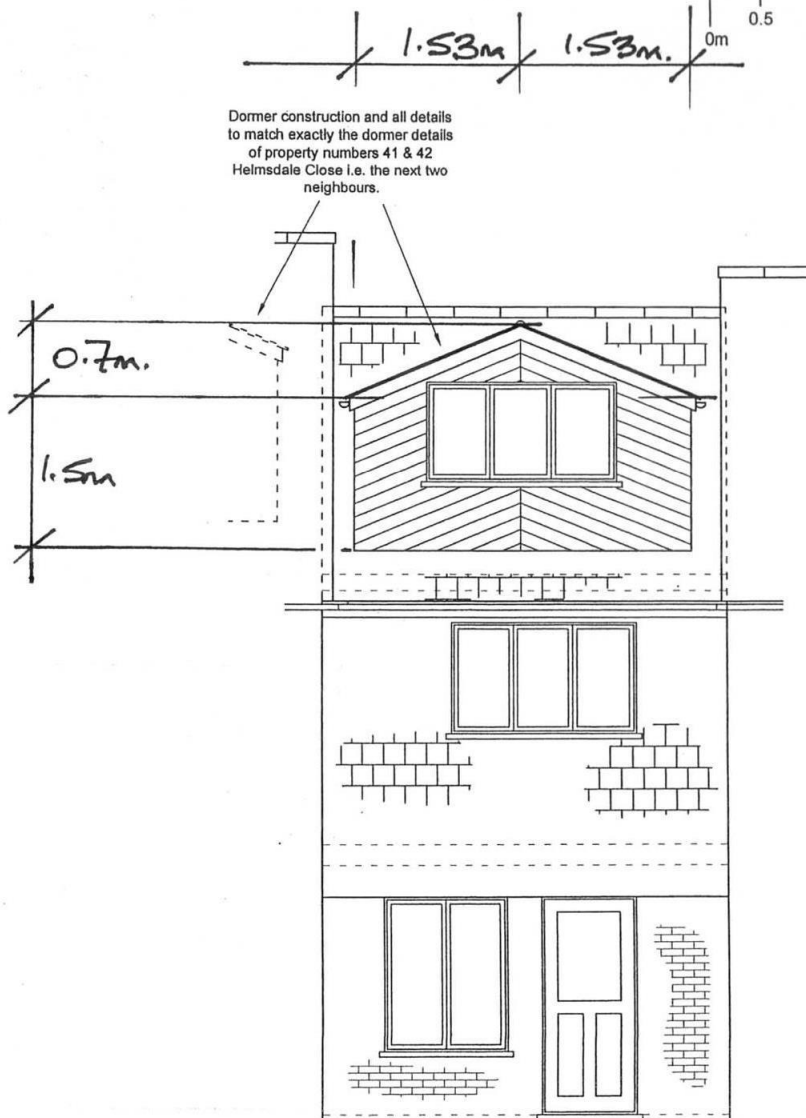


Notes:

1. For general notes see drawing 1156 - 21.



Proposed Front Elevation
Scale 1 : 50

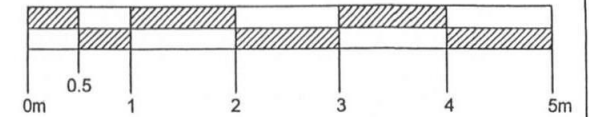


Proposed Rear Elevation
Scale 1 : 50



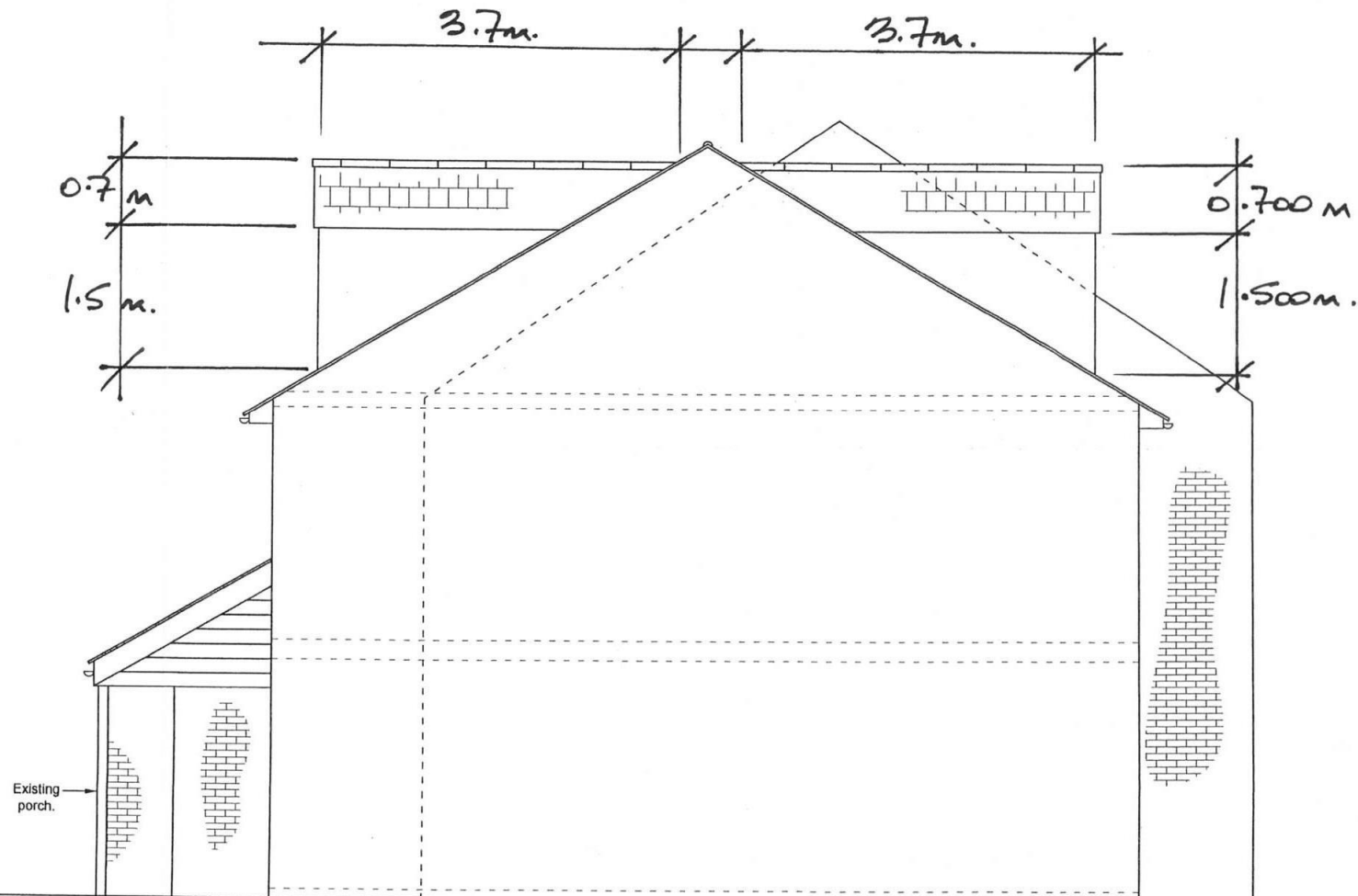
SOARBOND Ltd. Chartered Engineers 17 Clarendon Road, Enfield, London N9 5JA	
tel 020 8957 8463 mobile 07779 863 888 email soarbond@soarbond.co.uk	
Job title Redevelopment at 40 Helmsdale Close, Hoyes, Middlesex UB4 9QS	
Drawing title Proposed Front Elevation & Proposed Rear Elevation	
Client Mr. Piotr Smietalo	
Drawn by S. Zablocka	Date July 2014
Check'd W.K.J. Zablocki	Date July 2014
Job number 1156	Scale 1 : 50
Drawing number 1156 - 23	

Scale 1: 50

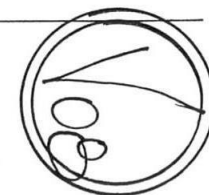


Notes:

1. For general notes see drawing 1156 - 21.



Proposed Side Elevation
Scale 1: 50



SOARBOND Ltd. Chartered Engineers 17 Chesham Road, Ealing, London W5 1AE	
Job No	Date
Redevelopment at 40 Holmsdale Close, Hoyes, Middlesex UB4 9QS	
Drawing No	Date
Proposed Side Elevation	
Client	Date
Mr. Piotr Smietalo	
Drawn by	Date
S. Zollocks July 2014	
Check'd	Date
W.K.J. Zollocks July 2014	
Job number	Scale
1156	1 : 50
Drawing number	
1156 - 24	

Project 40, Helmsdale Close, Hayes, UB 4.			Job ref 1156	
Part of structure Volume Calculations			Calc sheet no V 9 rev	
Drawing ref	Calc by	Date	Check by	Date

Ref	Calculations	Output
	Site Area. 4.0 m x 24.50 m + 2.5 m x 5.0 m + (3.0 m + 5.7 m) x 2.8 m / 2 = 122.7 m2	
	Original House Floor Areas. Ground - Nett 3.90 m x 9.00 m 0.80 m x 0.80 m = 35.7 m2	
	First 3.90 m x 9.00 m = 35.1 m2	
	Second 0 m x 0 m = 0.0 m2	
	TOTALS. = 70.8m2	
	Increased House Floor Areas. New Second Floor Area 3.10 m x 8.00 m + 0.15 m x 2.00 m = 25.1 m2	
	House Floor Area after LDC. = 95.9 m2	

Project 40, Helmsdale Close, Hayes, UB 4.			Job ref 1156	
Part of structure Volume Calculations			Calc sheet no V 10 rev	
Drawing ref	Calc by	Date	Check by	Date
Ref	Calculations			Output
	House Volumes.			
	Original.			
	Ground Floor	$35.7 \text{ m}^2 \times 2.60 \text{ m}$	$= 92.8 \text{ m}^3$	
	First Floor	$35.1 \text{ m}^2 \times 2.60 \text{ m}$	$= 91.3 \text{ m}^3$	
	Roof	$9.06 \times 4.0 \times 2.6 / 2$	$= 47.0 \text{ m}^3$	
	TOTAL		$= 231.1 \text{ m}^3$	
	Added Loft Conversion Volume.			
	Two Dormers as $2 \times (2.65 \times 1.05 \times 3.06) / 2$			
	$+ 2 (3.06 \times 0.7 / 2) \times 2.65 + 2 (1.05 \times 0.7 \times 3.06 / 2) \times 3$			
			$= 15.0 \text{ m}^3$	
	House Volume Proposed.			
		$231.1 \text{ m}^3 + 15.0 \text{ m}^3$	$= 246.1 \text{ m}^3$	

Project 40, Helmsdale Close, Hayes, UB 4.			Job ref 1156	
Part of structure Volume Calculations			Calc sheet no V 11 rev	
Drawing ref	Calc by	Date	Check by	Date

Ref	Calculations	Output
	Loft Conversion Nett Increase in Volume. Allowed = 40.00m3 Actual = 15.00m3 Say OK. New Plot Ratio. 35.7 m2 / 122.7 m2 = 0.29 Allowed plot ratio to approach 2.0 in Hillingdon. Say OK. New Bulk Ratio. (231.1 + 15.00) m3 / 122.7 m2 = 2.01 Allowed Bulk Ratio can approach 8.0 Actual ratio to allowed ratio 2.01 / 8.0 = 0.25 i.e. 25.0 % utilised. Say OK.	