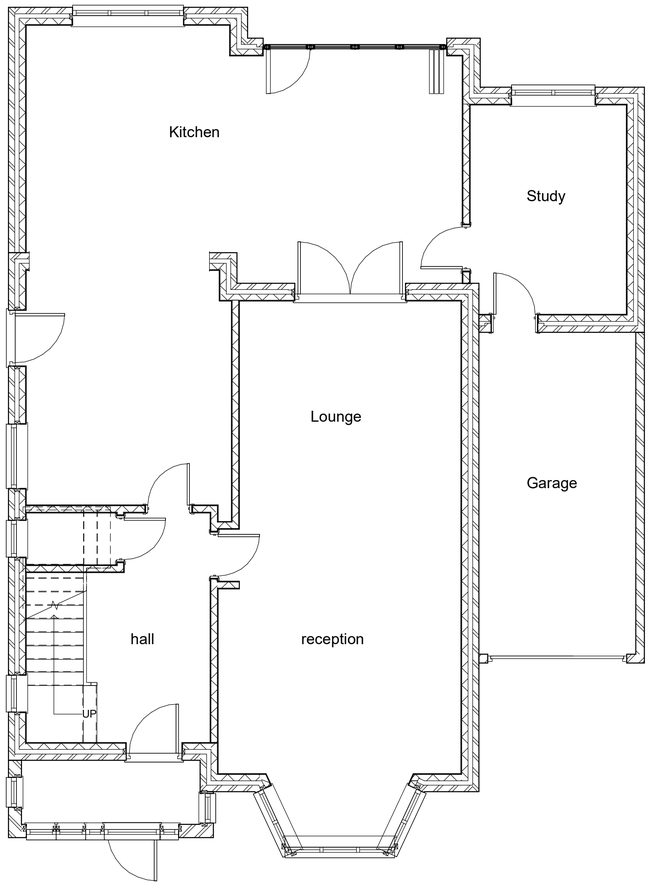
0m 1m 2m 3m 4m 5m

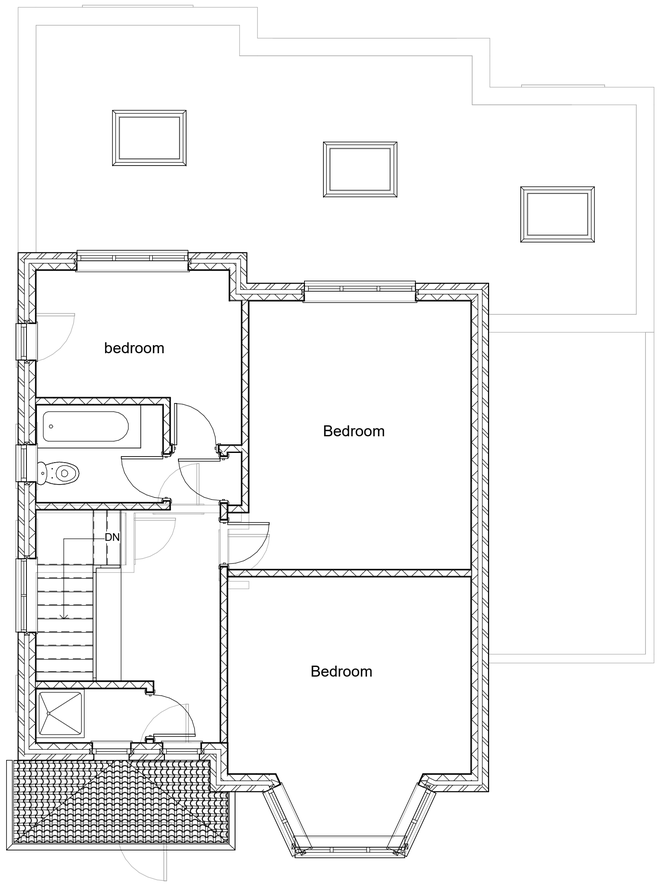
VISUAL SCALE 1:50 @ A1



Existing Ground Floor
1 : 50

0m 2m 4m 6m 8m 10m

VISUAL SCALE 1:100 @ A1

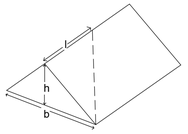


Existing First Floor
1 : 50

Existing Front elevation
1 : 100

Existing Side Elevation
1 : 100

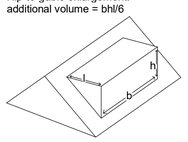
Existing Rear Elevation
1 : 100



Hip-to-gable enlargement:
additional volume = bhl/6

$$\frac{6.679 \times 2.609 \times 3.340}{6} = 9.70$$

$$\frac{6.679 \times 3.094 \times 3.960}{6} = 13.63$$



Box dormer enlargement:
additional volume = bhl/2

$$\frac{7.326 \times 2.287 \times 2.935}{2} = 24.58$$

Total cubic volume = 47.91

Volume Calculation
1 : 50

BENJAMIN ASSOCIATES LTD

CIOB Chartered Building Consultancy

31 Danemead Grove
Northolt
Middlesex
UB5 4NX

Tel 0208 423 0608
Fax 0208 357 9714

Chartered Institute of Architectural Technologists
Registered Practice

www.benjaminassociates.co.uk

GENERAL
ALL WORK TO BE CARRIED OUT TO LOCAL AUTHORITY APPROVAL AND IN ACCORDANCE WITH THE CURRENT BUILDING REGULATIONS AND CODES OF PRACTICE
ALL DIMENSIONS AND LEVELS TO BE CHECKED ON SITE AND ANY DISCREPANCIES TO BE REPORTED IMMEDIATELY.
CONTRACTOR IS RESPONSIBLE FOR SETTING OUT THE WORKS
ALL STRUCTURAL WORK TO BE CARRIED OUT IN ACCORDANCE WITH ENGINEER'S DESIGN AND DETAILS
DO NOT SCALE DRAWINGS
DRAWINGS PRODUCED FOR THE PURPOSE OF OBTAINING BUILDING REGULATIONS APPROVALS ONLY AND DO NOT CONSTITUTE FULL WORKING DRAWINGS

Foundations: concrete strip foundation to be 600mm widewith conc. mix 1:2:4. Foundation depth to be min 1200mmbelow lowest ground level or to level of adjacent drains,whichever is deeper and 600mm below any roots found intrench or as indicated.Sulphate resisting cement to be used in all works below D.P.C level. Engineering bricks below D.P.C

Drainage: All internal pipes above ground level to be PVC,sink to have 50mm dia. up to 4m length, basin to have32mm dia. up to 1.7m Length, shower to have 50mm dia.w.c to have 100mm dia pipe. All traps to be 75mm deep.Provide rodding eye at change of direction, ground floor wc to have sub stack. Sub stack terminal to be higher than any over-flow of sanitary appliances. All above ground fould drainage to be designed to BS 5572 and installed in accordance with BS 8000:part13, section 3 and BS 5572.

All drains below ground level to be 100mm dia. Hepsleveor similar clay pipes laid to min 1:40 Fall and in accordanceto manufactures instructions.

All drains under building to be protected with P.C conc. lintels where passing through wall.

Existing position of drainage & manholes to be investigated on site during the construction. The new drainage laid to suit position of MH and invert level and to be approved by building control surveyor. Internal manhole to be completely removed.

Rainwater disposal: Provide 100mm pvc half round guttering with 63mm pvc downpipe discharging to roddable backinlet gullies and connected to existing urface water drains.The position of the surface water drains is to be loactedon commencement of work if not readily ascertainable and final arrangement to be agreed with L.A surveyor.

Ventilation: Rapid ventilation to all habitable rooms and sanitary accommodation if separate from bathroom to be minimum 1/20th of floor area

Background ventilation to all habitable rooms to have 8000 sq.mm kitchen to have 4000sq.mm sanitary accommodation to have 4000 sq.mm.

Mechanical extract ventilation - kitchen to have 30 litres/sec. in or adjacent to hob. 60 litres/sec elswhere. Shower/w.c and utility to have extract fan capable of extracting 15 litres/sec with 15 minutes overrun connected to light switch.

Doors and windows: all new external doors and windows to be aluminium double glazed with night ventilation of mimum arae 1000sq.mm

All new doors & side panels to have saftey laminated glazing between finished floor level and 1500mm above that level. Windows and partitions to have laminated safety glazing between finished floor level and 800mm above that level.
Habitable room must have emergency egress window of opening mimum 450mm wide and 750mm high not higher than 1100mm
All double glazed window units to 28mm with 6.4mm outer laminated glass and inner 4mm clear glass, 17.6mm air gap, argon filled and a "soft" low- E coating. double glazed unit to achieve 'U' value of at least 1.6W/M.sq.K. windows to comply with L1A 2006.

Floor: 75mm 1:4 cement/sand screed with anti crash wire mesh on 250 gauge polythene vapour barrier on TF 80mmKingspan 'Thermafloor' rigid slab insulation (P/A Ratio 0.8 use TF 80mm to achieve U-Value 0.22) laid in accordancewith manufacturer's instructions on 150mm thick RC (A142 mesh) 'FND2' conc. slab on 1200 gauge polythenD.P.M on 50mm sand blinding on compacted DOT Type 1granular fill hardcore. Slab to be thickened below internalwalls. 25mm thickness of insulation board turned up all walls faces to FFL over DPM upstand. Polythine brought up to edges of slab to LAP DPC in walls and all joints lapped and sealed.

Wall: To achieve minimum U Value of 0.28W/m²K
New cavity wall to comprise of 105mm facing brick to match existing. Full fill the cavity with 100mm Rockwool Cavity insulation as manufacturer's details. Inner leaf to be 100mm lightweight block, K value 0.16, (Aircrete, Celcon solar, Topblock toplite standard). Internal finish to be 12.5mm plasterboard on dabs. Walls to be built with 1:1:6 cement mortar.

Wall ties to be double triangle stainless steel evenly spaced at 750mm centres horizontally staggered in alternate courses an 450mm centres vertically. Provide additional ties beneath the lowest row of insulation batts anddouble at reveals

Catnic metal lintels to external openings and filled with insulation. Wall connector new wall connected to existing wall with 'Furfix' steel connector or similar. Polysulphide sealant pointing to external joints.

Stud partition to 50 x 100 studs at 400c/c with 12.5mm plaestr board skim finished. 50x100mm base plate of stud partition supported on floors joists with 50 x 100 noggings@ 400 c/c. void with partition filled with rockwool rollbatts.

Damp Proof Course: Hessian based felt or similar horizontal and vertical D.P.C. to walls D.P.C. 150mm minimum above all adjoining ground level, D.P.C under window cil and reveals
All damp proof elements to be lapped and bonded with existing D.P.C

Flat Roof (Warm): (imposed load max 1.0 kN/m² - dead load max 0.75 kN/m²)
To achieve U value 0.18 W/m²K
12.5mm spa solar reflective chippings to achieve aa designated fire rating for surface spread of flame bedded in bitumen on three layer felt to BS 6229:2003 on 22mm external quality ply (ply optional, see manufacturer's details) over 120mm Celotex Crown-Up.
Insulation bonded to VCL fixed to 22mm exterior grade plywood on firrings to give 1:60 fall on 47 x 195mm C24 timber joists at 400 ctrs to give a max span of 4.51m (see engineer's details for sizes). Ceilings to be 12.5mm plasterboard over vapour barrier with skim plaster finish.
Provide restraint to flat roof by fixing of 30 x 5 x 1000mm ms galvanised lateral restraint straps at maximum 2000mm centres fixed to 100 x 50mm wall plates and anchored to wall.

Electrical: Electrical cables should be fixed to the structure above the insulation, so that they can dissipate heat. PVC insulated cables should not be in direct contact with any expanded polystyrene insulation, recessed fittings designed for compact fluorescent or low voltage tungsten halogen lamps should only be used within enclosure, set between the joists, to dissipate heat. If recessed light fittings are used, ensure that the floor maintains a full half hour period of fire resistance.

All electrical works required to meet the provision of part P (electrical safety) must be designed, installed, inspected and tested by a person competent to do so.

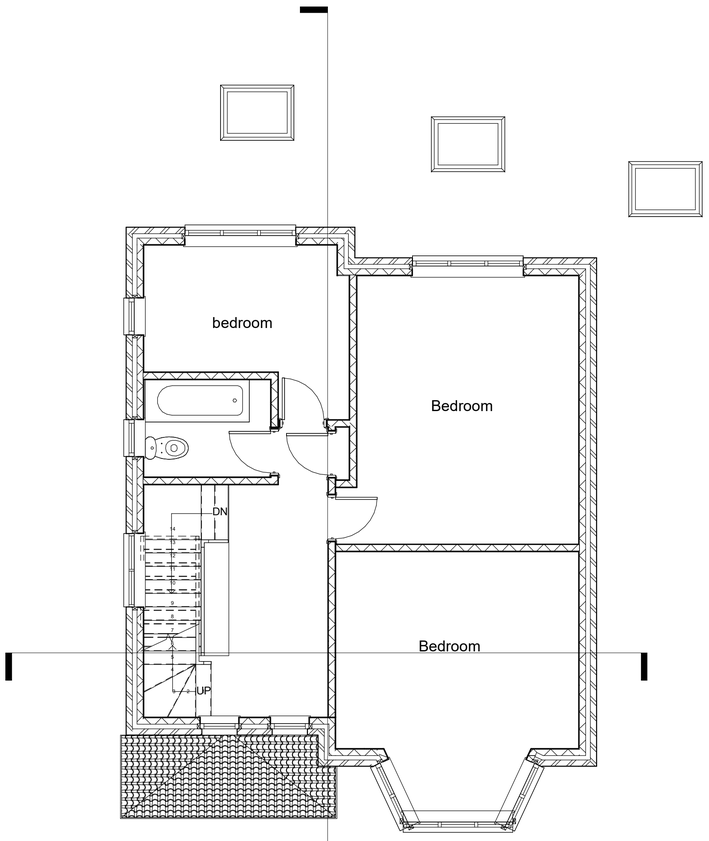
Prior to electrical completion the council should be satisfied that the part P has been compiled with, this may require an appropriate BS 7671 electrical installation certificate to be issued for the work by a person competent to do so.

Lighting and electrical works: Lighting to new extension and loft conversion to be efficient lighting that only take lamps luminous of efficency greater than 40 luminious per circuit-watts. All electrical works must be designed, installed, inspected and tested by a competent person.

Client	Mr D Leys
Address	28 Westholme Gardens Ruislip Hillingdon HA4 8QJ
Project name	Loft Conversion
Project number	28WEST/023
Date	October 2023
Drawn by	Author
Checked by	Checker
Sheet number	A101
Scale	As indicated

0m 1m 2m 3m 4m 5m

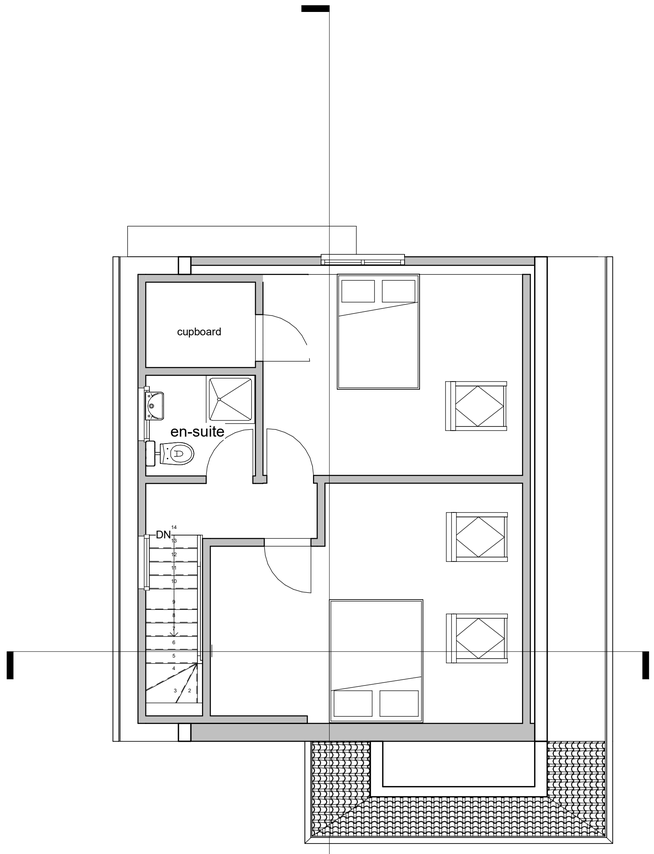
VISUAL SCALE 1:50 @ A1



Proposed First Floor
1 : 50

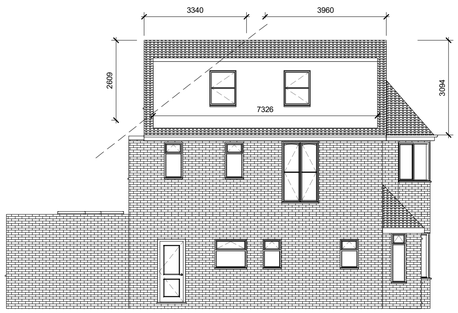
0m 2m 4m 6m 8m 10m

VISUAL SCALE 1:100 @ A1

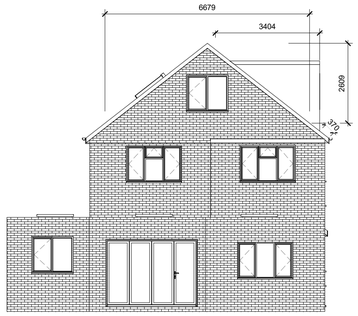


Proposed Loft Floor
1 : 50

Proposed Front elevation
1 : 100



Proposed side eleavtion
1 : 100



Proposed Rear elevation
1 : 100

BENJAMIN ASSOCIATES LTD

CIOB Chartered Building Consultancy

31 Danemead Grove
Northolt
Middlesex
UB5 4NX

Tel 0208 423 0608
Fax 0208 357 9714

Chartered Institute of Architectural Technologists
Registered Practice

www.benjaminassociates.co.uk

GENERAL
ALL WORK TO BE CARRIED OUT TO LOCAL AUTHORITY APPROVAL AND IN ACCORDANCE WITH THE CURRENT BUILDING REGULATIONS AND CODES OF PRACTICE
ALL DIMENSIONS AND LEVELS TO BE CHECKED ON SITE AND ANY DISCREPANCIES TO BE REPORTED IMMEDIATELY.
CONTRACTOR IS RESPONSIBLE FOR SETTING OUT THE WORKS
ALL STRUCTURAL WORK TO BE CARRIED OUT IN ACCORDANCE WITH ENGINEER'S DESIGN AND DETAILS
DO NOT SCALE DRAWINGS
DRAWINGS PRODUCED FOR THE PURPOSE OF OBTAINING BUILDING REGULATIONS APPROVALS ONLY AND DO NOT CONSTITUTE FULL WORKING DRAWINGS

Foundations: concrete strip foundation to be 600mm widewith conc. mix 1:2:4. Foundation depth to be min 1200mmbelow lowest ground level or to level of adjacent drains,whichever is deeper and 600mm below any roots found intrench or as indicated.Sulphate resisting cement to be used in all works below D.P.C level. Engineering bricks below D.P.C

Drainage: All internal pipes above ground level to be PVC,sink to have 50mm dia. up to 4m length, basin to have32mm dia. up to 1.7m Length, shower to have 50mm dia.w.c to have 100mm dia pipe. All traps to be 75mm deep.Provide rodding eye at change of direction, ground floor wc to have sub stack. Sub stack terminal to be higher than any over-flow of sanitary appliances. All above ground fould drainage to be designed to BS 5572 and installed in accordance with BS 8000:part13, section 3 and BS 5572.

All drains below ground level to be 100mm dia. Hepslevoir similar clay pipes laid to min 1:40 Fall and in accordanceto manufactures instructions.

All drains under building to be protected with P.C conc. lintels where passing through wall.

Existing position of drainage & manholes to be investigated on site during the construction. The new drainage laid to suit position of MH and invert level and to be approved by building control surveyor. Internal manhole to be completely removed.

Rainwater disposal: Provide 100mm pvc half round guttering with 63mm pvc downpipe discharging to roddable backinlet gullies and connected to existing urface water drains.The position of the surface water drains is to be loactedon commencement of work if not readily ascertainable and final arrangement to be agreed with L.A surveyor.

Ventilation: Rapid ventilation to all habitable rooms and sanitary accommodation if separate from bathroom to be minimum 1/20th of floor area

Background ventilation to all habitable rooms to have 8000 sq.mm kitchen to have 4000sq.mm sanitary accommodation to have 4000 sq.mm.

Mechanical extract ventilation - kitchen to have 30 litres/sec. in or adjacent to hob. 60 litres/sec elswhere. Shower/w.c and utility to have extract fan capable of extracting 15 litres/sec with 15 minutes overrun connected to light switch.

Doors and windows: all new external doors and windows to be aluminium double glazed with night ventilation of mimum arae 1000sq.mm

All new doors & side panels to have saftey laminated glazing between finished floor level and 1500mm above that level. Windows and partitions to have laminated safety glazing between finished floor level and 800mm above that level.
Habitable room must have emergency egress window of opening mimum 450mm wide and 750mm high not higher than 1100mm
All double glazed window units to 28mm with 6.4mm outer laminated glass and inner 4mm clear glass, 17.6mm air gap, argon filled and a "soft" low- E coating, double glazed unit to achieve 'U' value of at least 1.6W/M.sq.K. windows to comply with L1A 2006.

Floor: 75mm 1:4 cement/sand screed with anti crash wire mesh on 250 gauge polythene vapour barrier on TF 80mmKingspan 'Thermafloor' rigid slab insulation (P/A Ratio 0.8 use TF 80mm to achieve U-Value 0.22) laid in accordancewith manufacturer's instructions on 150mm thick RC (A142 mesh) 'FND2' conc. slab on 1200 gauge polytheneD.P.M on 50mm sand blinding on compacted DOT Type 1granular fill hardcore. Slab to be thickened below internalwalls. 25mm thickness of insulation board turned up all walls faces to FFL over DPM upstand. Polythine brought up to edges of slab to LAP DPC in walls and all joints lapped and sealed.

Wall: To achieve minimum U Value of 0.28W/m²K
New cavity wall to comprise of 105mm facing brick to match existing. Full fill the cavity with 100mm Rockwool Cavity insulation as manufacturer's details. Inner leaf to be 100mm lightweight block, K value 0.16, (Aircrete, Celcon solar, Topblock toplite standard). Internal finish to be 12.5mm plasterboard on dabs. Walls to be built with 1:1:6 cement mortar.

Wall ties to be double triangle stainless steel evenly spaced at 750mm centres horizontally staggered in alternate courses an 450mm centres vertically. Provide additional ties beneath the lowest row of insulation batts anddouble at reveals

Catnic metal lintels to external openings and filled with insulation. Wall connector new wall connected to existing wall with 'Furfix' steel connector or similar. Polysulphide sealant pointing to external joints.

Stud partition to 50 x 100 studs at 400c/c with 12.5mm plaestr board skim finished. 50x100mm base plate of stud partition supported on floors joists with 50 x 100 noggings@ 400 c/c. void with partition filled with rockwool rollbatts.

Damp Proof Course: Hessian based felt or similar horizontal and vertical D.P.C. to walls D.P.C. 150mm minimum above all adjoining ground level, D.P.C under window cil and reveals
All damp proof elements to be lapped and bonded with existing D.P.C

Flat Roof (Warm): (imposed load max 1.0 kN/m² - dead load max 0.75 kN/m²)
To achieve U value 0.18 W/m²K
12.5mm spa solar reflective chippings to achieve aa designated fire rating for surface spread of flame bedded in bitumen on three layer felt to BS 6229:2003 on 22mm external quality ply (ply optional, see manufacturer's details) over 120mm Celotex Crown-Up.
Insulation bonded to VCL fixed to 22mm exterior grade plywood on firrings to give 1:60 fall on 47 x 195mm C24 timber joists at 400 ctrs to give a max span of 4.51m (see engineer's details for sizes). Ceilings to be 12.5mm plasterboard over vapour barrier with skim plaster finish.
Provide restraint to flat roof by fixing of 30 x 5 x 1000mm ms galvanised lateral restraint straps at maximum 2000mm centres fixed to 100 x 50mm wall plates and anchored to wall.

Electrical: Electrical cables should be fixed to the structure above the insulation, so that they can dissipate heat. PVC insulated cables should not be in direct contact with any expanded polystyrene insulation, recessed fittings designed for compact fluorescent or low voltage tungsten halogen lamps should only be used within enclosure, set between the joists, to dissipate heat. If recessed light fittings are used, ensure that the floor maintains a full half hour period of fire resistance.

All electrical works required to meet the provision of part P (electrical safety) must be designed, installed, inspected and tested by a person competent to do so.

Prior to electrical completion the council should be satisfied that the part P has been complied with, this may require an appropriate BS 7671 electrical installation certificate to be issued for the work by a person competent to do so.

Lighting and electrical works: Lighting to new extension and loft conversion to be efficient lighting that only take lamps luminious of efficency greater than 40 luminious per circuit-watts. All electrical works must be designed, installed, inspected and tested by a competent person.

Client	Mr D Leys
Address	28 Westholme Gardens Ruislip Hillingdon HA4 8QJ
Project name	Loft Conversion
Project number	28WEST/023
Date	October 2023
Drawn by	Author
Checked by	Checker
Sheet number	A102
Scale	As indicated

0m 1m 2m 3m 4m 5m

VISUAL SCALE 1:50 @ A1

0m 2m 4m 6m 8m 10m

VISUAL SCALE 1:100 @ A1

BENJAMIN ASSOCIATES LTD

CIOB Chartered Building Consultancy

31 Danemead Grove
Northolt
Middlesex
UB5 4NX

Tel 0208 423 0608
Fax 0208 357 9714

Chartered Institute of Architectural Technologists
Registered Practice

www.benjaminassociates.co.uk

GENERAL
ALL WORK TO BE CARRIED OUT TO LOCAL AUTHORITY APPROVAL AND IN ACCORDANCE WITH THE CURRENT BUILDING REGULATIONS AND CODES OF PRACTICE
ALL DIMENSIONS AND LEVELS TO BE CHECKED ON SITE AND ANY DISCREPANCIES TO BE REPORTED IMMEDIATELY.
CONTRACTOR IS RESPONSIBLE FOR SETTING OUT THE WORKS
ALL STRUCTURAL WORK TO BE CARRIED OUT IN ACCORDANCE WITH ENGINEER'S DESIGN AND DETAILS
DO NOT SCALE DRAWINGS
DRAWINGS PRODUCED FOR THE PURPOSE OF OBTAINING BUILDING REGULATIONS APPROVALS ONLY AND DO NOT CONSTITUTE FULL WORKING DRAWINGS

Foundations: concrete strip foundation to be 600mm widewith conc. mix 1:2:4. Foundation depth to be min 1200mmbelow lowest ground level or to level of adjacent drains,whichever is deeper and 600mm below any roots found intrench or as indicated.Sulphate resisting cement to be used in all works below D.P.C level. Engineering bricks below D.P.C

Drainage: All internal pipes above ground level to be PVC,sink to have 50mm dia. up to 4m length, basin to have32mm dia. up to 1.7m Length, shower to have 50mm dia.w.c to have 100mm dia pipe. All traps to be 75mm deep.Provide rodding eye at change of direction, ground floor wc to have sub stack. Sub stack terminal to be higher than any over-flow of sanitary appliances. All above ground fould drainage to be designed to BS 5572 and installed in accordance with BS 8000:part13, section 3 and BS 5572.

All drains below ground level to be 100mm dia. Hepsleveor similar clay pipes laid to min 1:40 Fall and in accordanceto manufactures instructions.

All drains under building to be protected with P.C conc. lintels where passing through wall.

Existing position of drainage & manholes to be investigated on site during the construction. The new drainage laid to suit position of MH and invert level and to be approved by building control surveyor. Internal manhole to be completely removed.

Rainwater disposal: Provide 100mm pvc half round guttering with 63mm pvc downpipe discharging to roddable backinlet gullies and connected to existing urface water drains.The position of the surface water drains is to be loactedon commencement of work if not readily ascertainable and final arrangement to be agreed with L.A surveyor.

Ventilation: Rapid ventilation to all habitable rooms and sanitary accommodation if separate from bathroom to be minimum 1/20th of floor area

Background ventilation to all habitable rooms to have 8000 sq.mm kitchen to have 4000sq.mm sanitary accommodation to have 4000 sq.mm.

Mechanical extract ventilation - kitchen to have 30 litres/sec. in or adjacent to hob. 60 litres/sec elswhere. Shower/r.w.c and utility to have extract fan capable of extracting 15 litres/sec with 15 minutes overrun connected to light switch.

Doors and windows: all new external doors and windows to be aluminium double glazed with night ventilation of mimum arae 1000sq.mm

All new doors & side panels to have saftey laminated glazing between finished floor level and 1500mm above that level. Windows and partitions to have laminated safety glazing between finished floor level and 800mm above that level.
Habitable room must have emergency egress window of opening mimum 450mm wide and 750mm high not higher than 1100mm
All double glazed window units to 28mm with 6.4mm outer laminated glass and inner 4mm clear glass, 17.6mm air gap, argon filled and a "soft" low- E coating. double glazed unit to achieve 'U' value of at least 1.6W/M.sq.K. windows to comply with L1A 2006.

Floor: 75mm 1:4 cement/sand screed with anti crash wire mesh on 250 gauge polythene vapour barrier on TF 80mmKingspan 'Thermafloor' rigid slab insulation (P/A Ratio 0.8 use TF 80mm to achieve U-Value 0.22) laid in accordancewith manufacturer's instructions on 150mm thck RC (A142 mesh) 'FND2' conc. slab on 1200 gauge polytheneD.P.M on 50mm sand blinding on compacted DOT Type 1granular fill hardcore. Slab to be thickened below internalwalls. 25mm thickness of insulation board turned up all walls faces to FFL over DPM upstand. Polythine brought up to edges of slab to LAP DPC in walls and all joints lapped and sealed.

Wall: To achieve minimum U Value of 0.28W/m²K
New cavity wall to comprise of 105mm facing brick to match existing. Full fill the cavity with 100mm Rockwool Cavity insulation as manufacturer's details. Inner leaf to be 100mm lightweight block, K value 0.16, (Aircrete, Celcon solar, Topblock toplite standard). Internal finish to be 12.5mm plasterboard on dabs. Walls to be built with 1:1:6 cement mortar.

Wall ties to be double triangle stainless steel evenly spaced at 750mm centres horizontally staggered in alternate courses an 450mm centres vertically. Provide additional ties beneath the lowest row of insulation batts anddouble at reveals

Catnic metal lintels to external openings and filled with insulation. Wall connector new wall connected to existing wall with 'Furfix' steel connector or similar. Polysulphide sealant pointing to external joints.

Stud partition to 50 x 100 studs at 400c/c with 12.5mm plaset board skim finished. 50x100mm base plate of stud partition supported on floors joists with 50 x 100 noggings@ 400 c/c. void with partition filled with rockwool rollbatts.

Damp Proof Course: Hessian based felt or similar horizontal and vertical D.P.C. to walls D.P.C. 150mm minimum above all adjoining ground level. D.P.C under window cil and reveals
All damp proof elements to be lapped and bonded with existing D.P.C

Flat Roof (Warm): (imposed load max 1.0 kN/m² - dead load max 0.75 kN/m²)
To achieve U value 0.18 W/m²K
12.5mm spa solar reflective chippings to achieve aa designated fire rating for surface spread of flame bedded in bitumen on three layer felt to BS 6229:2003 on 22mm external quality ply (ply optional, see manufacturer's details) over 120mm Celotex Crown-Up.
Insulation bonded to VCL fixed to 22mm exterior grade plywood on firrings to give 1:60 fall on 47 x 195mm C24 timber joists at 400 ctrs to give a max span of 4.51m (see engineer's details for sizes.). Ceilings to be 12.5mm plasterboard over vapour barrier with skim plaster finish.
Provide restraint to flat roof by fixing of 30 x 5 x 1000mm ms galvanised lateral restraint straps at maximum 2000mm centres fixed to 100 x 50mm wall plates and anchored to wall.

Electrical: Electrical cables should be fixed to the structure above the insulation, so that they can dissipate heat. PVC insulated cables should not be in direct contact with any expanded polystyrene insulation, recessed fittings designed for compact fluorescent or low voltage tungsten halogen lamps should only be used within enclosure, set between the joists, to dissipate heat. If recessed light fittings are used, ensure that the floor maintains a full half hour period of fire resistance.

All electrical works required to meet the provision of part P (electrical safety) must be designed, installed, inspected and tested by a person competent to do so.

Prior to electrical completion the council should be satisfied that the part P has been complied with, this may require an appropriate BS 7671 electrical installation certificate to be issued for the work by a person competent to do so.

Lighting and electrical works: Lighting to new extension and loft conversion to be efficient lighting that only take lamps luminious of effcency greater than 40 luminious per circuit-watts. All electrical works must be designed, installed, inspected and tested by a competent person.

Client	Mr D Leys
Address	28 Westholme Gardens Ruislip Hillingdon HA4 8QJ
Project name	Loft Conversion
Project number	28WEST/023
Date	October 2023
Drawn by	M.Benjamin
Checked by	MSB
Sheet number	A103
Scale	