

METHOD STATEMENT AND RISK ASSESSMENT

DOCUMENT NUMBER: ACL – 002 – MS - 067

**DOCUMENT NAME: INSTALLATION OF TEMPORAY
SUPPORT AS WELL AS PERMANENT STEELWORK TO
ANNEX AREA**

Revision	Date	Prepared	Signed	Reviewed by	Signed by
00 – first issue	15.08.2022	RAZVAN GOLDU - HEALTH AND SAFETY MANAGER			
02-	30-09-22	Justin Elezaj			

Index

1. Introduction...	3
2. Scope of Work...	4
3. Installation Method...	2
4. Sequence of works...	3-4
5. Resources...	5
6. Emergency Procedures...	6
7. Waste management...	6
8. Method Statement Acceptance Sheet...	9

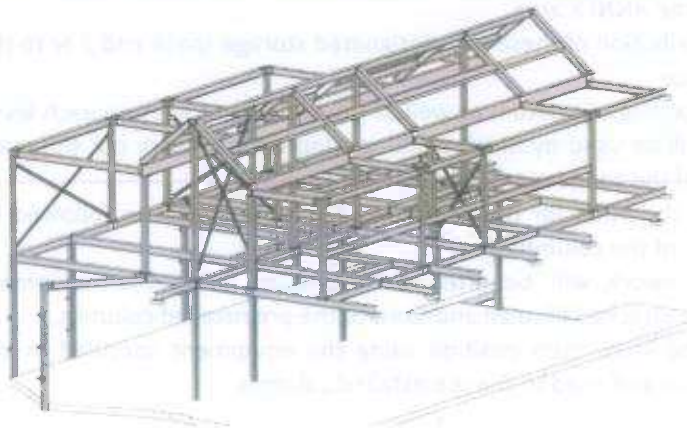
30-08-2018 13:03

1.INTRODUCTION

This document is to be read and applied in conjunction with the documents mentioned as attachments. It refers the installation of steelwork – temporary followed by permanent – to Annex area.

september / october

The works are to commence in ~~August~~ and are estimated to last for about a month with a team of 4 – 6 operatives. The team will be responsible for distribution of materials, marking out and setting out the position of the steel, fixing the temporary or permanent steel elements to existing structures. This will be achieved either by using mechanical connections or welding as instructed by the design team. Once completed – works will be subject to final checks and adjustments, torquing of the hold-down bolts as QA documentation.



permanent

temporary

2.SCOPE OF WORKS

The scope of works includes the following activities:

A. TEMPORARY STEELWORK INSTALLATION

- Receiving the delivery and coordinate with the ACL team to have all pallets loaded out to the ANNEX area
- Horizontal distribution of these to a designated storage space and / or to the installation place
- ACL engineer setting out datum as well as off-sets to grid lines on each level. The off sets will be used by BMW working supervisor to work out the mark out positions of the connections with existing steel.
- The first fix Gallows brackets will be fixed to the existing brickwork using chemical anchoring.
- Secondary steelwork will be lifted onto position using the equipment specified in the attached lift plan and rested to the top of the brackets; a wooden structure will be installed to the outer perimetral area of the Annex building and connected to the beams to form a sandwich structure with the role of strengthening the walls until the permanent steel will be installed.

B. PERMANENT STEELWORK INSTALLATION – FIRST FLOOR

- Receiving the delivery and coordinate with the ACL team to have all pallets loaded out to the ANNEX area
- Horizontal distribution of these to a designated storage space and / or to the installation place
- ACL engineer setting out datum as well as off-sets to grid lines on each level. The off sets will be used by BMW working supervisor to work out the mark out positions of the connections with existing steel.
- The drilling of the holes for the hold-down connections will be followed by the installation of the columns
- Secondary steelwork will be lifted onto position using the equipment specified in the attached lift plan and fixed to the preinstalled columns.
- Bracings will be lifted onto position using the equipment specified in the attached lift plan and fixed to the preinstalled columns.

This sequence is to be applied to the second floor as well as for the roof.

SCHEDULE OF INSTALLATION

^{Permanent} The installation is due to start ~~August~~ ^{end of september} 2022, this date is however subject to confirmation. The installation period is estimated to about 4-6 weeks. Please refer the schedule of installation attached to this document.



The final operation will consist in torquing of each of the four bolts – the following general principles are to be used:

- For HSFG bolted connections you will need to refer and follow the 14399-standard using tightening the bolts and DTI washers.
- For non-preloaded bolted connections, you will need to refer to the BS EN 15048.
- For TCB bolts, the bolts are pre-loaded to the values so you just need to tighten until the bolt end indicator shears off.

Table 3 – Preload Values in kN

Property Class	Bolt diameter in mm							
	12	16	20	22	24	27	30	36
8.8	47	88	137	170	198	257	314	458
10.9	59	110	172	212	247	321	393	572

Once all the brackets installed, beams will be lifted onto the brackets with one genie lift SLK10 and rested on top of the brackets as shown in the figure above. The beams will be connected with splices and using M20 through bolts.



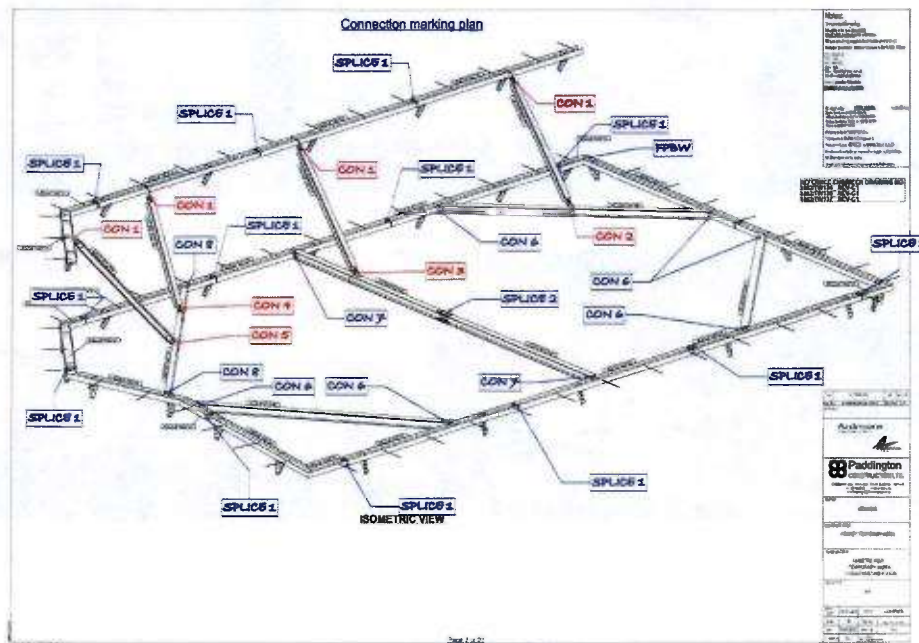
B. PERMANENT STEELWORK INSTALLATION

Once the temporary structure is in place, the team will proceed to install the permanent steelwork. This will commence with receiving the delivery of the materials from Paddington via site designated loading bay and liaise with the logistic team from ACL to have them loaded out to each of the individual levels of the Annex. This will include the following type of materials

- Columns
- Secondary steelwork – overhead steel beams and columns as well as bracings
- Fixings specified in the schedule of each GA as well as Hilti resin chemical anchors

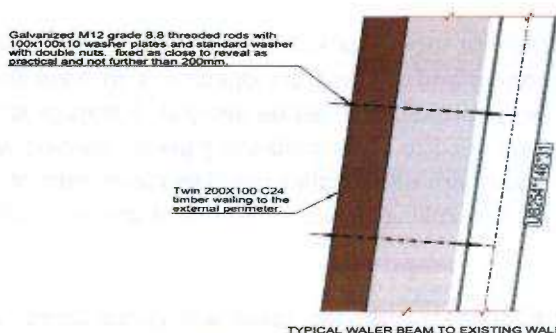
Once loaded out to each level, BWM site supervisor will identify each element using AS drawings as well as GA positioning and will instruct operatives to have them distributed to each designated place. If installation will be delayed, a storage space away from the pedestrian routes will need to be defined using plastic barriers with suitable signage and materials stored there until further use. The movement of the materials will be done manually – using rolling skates for the steel and one pump-truck.

For the installation of the first-floor steelwork, the team will either access the working area either by two podium steps towers or from ground level. Once the first floor has been completed – ACL will proceed to ~~pour the concrete floor~~ ^{install slab}, this will enable access to the second level. The same process will be repeated for the second floor – this will enable access to the third floor.



Diagonal support beams will then be lifted onto position and secured to upper beam as well as to the bottom one as shown in the plan above.

After the installation of the temporary internal structure, the works to have this structure connected to a wooden lining to be installed on the outer perimeter of the building will commence. This will impose the wall to be drilled from the inside to the outside (600mm) using a M26 concrete drill.



The connection from the outside to the inside will be made based on the details specify in the drawing (please see above). A threaded bar will be used to tighten the two parts together. The internal connection will be made directly onto the metal horizontal beam fixed with washers and nuts

Table 3 – Preload Values in kN

Property Class	Bolt diameter in mm							
	12	16	20	22	24	27	30	36
8.8	47	88	137	170	198	257	314	458
10.9	59	110	172	212	247	321	393	572

This operation will need to be repeated until the first-floor steelwork will be completed. The working team will then need to pull away so that ACL can pour the concrete for the slab. Once ACL management will confirm, the team will resume installation of the steelwork for the second floor. Same procedure will need to be applied for the roof level.

4. SEQUENCE OF WORKS

This sequence is to be applied on both the temporary as well as the permanent steelwork on individual item – whether this is first fix of brackets

1. Delivery is to be received in the loading bay and checked by the BMW supervisor in charge.
2. Loading out of the delivered steel items is to be done by ACL team as per local logistic plan.
3. Exclusion zone is to be defined using barriers or fences locally before the works commenced where the stubs are to be installed. Suitable signs are to be displayed at a visible place, *and maintained at all times*
4. Setting out of the centre of each column / bracket using the engineer's marks
5. Preparations – either cleaning of the connection surfaces using a grinder or welding of connecting elements (e.g., "L" shaped brackets, etc.)
6. Drilling connection holes using specified drill bit and specific equipment.
7. Connect first fix elements as per sequence above using either mechanical connection or chemical anchoring
8. Connect second fix elements as per sequence above using either mechanical connection or welded connection
9. Adjust line, level and height followed by torquing if required.
10. QA documentation to be put in place and uploaded to the system.

The works will imply setting out of the position of the standing columns – working out the position of the centre of each base plate from the engineer gridlines or off-sets.

The fitters will then have to work out the position of each of the four holes from the centre of the baseplate. A magnetic drill is to be used to drill 4 no M20 holes into existing structure (preparation to be in place beforehand – cleaning of the beams using a 4,5' grinder). An SLK10 genie lift will be used to lift the columns into an upright position (lifting point to be used is top of the column attached to the hook of the genie lift) and placed on top of the predrilled holes. Once the load landed, it will be secured with M20 nuts and washers, and the lifting accessory detached. The level will not be adjusted at this point, as the overhead beam will need to be installed first.

If the column will need to be fixed additionally to the existing brickwork, this will be achieved through a "L" shaped bracket which will need to be welded to the column prior to its installation. The placement will be indicated by the section drawings and will impose laying a 6 mm of fillet weld.

The overhead beams will be positioned close to the two supporting columns – then manually placed on the plate of a SLK 10 genie lift. The beam will then be lifted onto the top of the columns secured with beam clamps to the plate of the genie lift. The beams will then be secured to the top of the columns using M20 or M16 through bolts.

Strengthening Some of the connections will need strengthening – this will be indicated by the GA. The straightening will imply welding a stiffened plate of 10mm – connecting with a 6 mm fillet weld layer to both supporting columns and to the overhead beams.

Finally, bracings can be installed – they will be manually placed onto the installation area and fixed to the columns with M20 bolts.

above described sequence will need to be repeated for each set of three columns and overhead beams
The above-described sequence will need to be repeated for each set of three columns and overhead beams. Once this structure completed – the team will proceed to align the columns and ensure that they are level. When this is confirmed, the team will proceed to torque the hold-down bolts as well as the overhead connections using the below parameters.

- For HSFG bolted connections you will need to refer and follow the 14399-standard using tightening the bolts and DTI washers.
- For non-preloaded bolted connections, you will need to refer to the BS EN 15048.
- For TCB bolts, the bolts are pre-loaded to the values so you just need to tighten until the bolt end indicator shears off.

2 podiums steps

4.5" / 9" grinder (cordless) Makita

Nut runners / Impact drill) HILTI

Torque (calibration certification to be in place)

Extension leads / charges – to be used only if strictly necessary.

LOLER and PUWER report to be provided to ACL as part of the Friday pack reports.

PAT testing certificates to be in places (updated every 3 months).

6. EMERGENCY PROCEDURES

The high-risk activities must have in place a rescue plan which will be coordinated with the one put in place by the principal contractor. This will need to outline the procedures to be followed in case of an accident that will aim at getting the injured person to safety area where first aid could be supplied until specialized help will arrive. Please see attached rescue plan for working off the scaffold and in the MAST climber.

The activities identified as high risk are:

- Lifting operations
- Hot works
- Working at height

The control measures to be specifically adopted – in addition to the control measures included in the risk assessment will include

- Having a minimum of one FAW trained operative to 5 operatives
- Working in teams of minimum two operatives
- Awareness delivered to the team members related to a standard response in case of emergency:
 - o Assess the situation
 - o Decide whether to make safe or summon professional help
 - o Provide first aid if competent and confident
 - o Aftermath

In the event of any accident or emergency on site, BM operatives will follow procedures before commencing with any further works:

- Working supervisor to report all incidents or accidents to site management. (As per principal contractors site induction)

5. RESOURCES

A. Labour

The working crew will be formed out of one team of 4 – 6 Operatives.
Specific qualifications required for the team will be:

- SSSTS level 3 / 4 NVQ site supervisor
- CPCS lift supervisor
- NVQ level 2 or 3 in metalworking
- **Coded welding**
- Manual Handling training.
- Working at height awareness (with elements of fall restraint) training.
- Abrasive wheels awareness training.
- Asbestos awareness training
- Fire Marshall training

DABs are to be conducted by the site supervisor as per template attached.

Toolbox talks on relevant topics are to be conducted on weekly basis.

B. Materials

Steel items as material schedule to be issued

Fixings as per fixing schedule – to be issued

Chemical anchors – Resin HY 270 – see attached COSHH assessment associated.

C. Plant / equipment / tools

SDS hammer drill (cordless) – HILTI TE40

Magnetic drill Makita

Resin gun HILTI

SKL10 genie lift with hook and plate

Beam clamps / Slings / M12 lifting eyes

- QA will be marked as “ready for inspection” and submitted to ACL QA manager

9. WASTE MANAGEMENT

The operatives will need to follow the requirements of the principal contractors’ waste management plan. The waste will be segregated as instructed and will be disposed to the designated bins.

A special attention is to be paid to the disposal of COSHH items (a specially designated bin (suitable signs and display) is to be provided to each work area).

Attachments:

- Risk assessment for the steelwork installation – 1862 – RAG - 067
- COSHH assessment with SDS - CA 006 - COSHH assessment Resin-HILTI HIT-HY-270

**WORKS ARE TO BE COMMENCED ONLY AFTER
THIS DOCUMENT HAS BEEN READ AND
UNDERSTOOD BY THE WORKING TEAM**

IF IN DOUBT, ASK!

- Working Supervisor to immediately stop all operations and make working area safe before reporting.
- Report any incidents to the main reception – 0208 606 0650 (out of hours main phone line diverts to company director)
- In the advent of a major incident local authorities will be notified as well as site management & BM M.D.
- All incidents minor or major must be recorded in the on-site accident book.

Once the Incident / Accident has been reported all working operations will cease until principal contractor site management & BM site management have agreed that the works are safe to be completed.

Bright Metalworks contact details:

Main Office	Watford	020 8606 0650
Commercial Director	Razvan Goldu	0737 8817973
Managing Director	Lucian Ciocoiu	0771 0783500

7. QUALITY MANAGEMENT

The team will need to have the works adequately documented in preparation to formal handover of the works as well as to have the health and safety file of the project supplied with relevant information. The site manager and the BMW QA manager will be the persons responsible with this process. The main steps to be undertaken are:

- Agree with ACL QA manager a template form for the QA – this could be either using one that was previously put in place or issue a new one
- Open the QA form using the Field View platform
- Inform the working team of the information needed to be included in the QA; this includes mainly
 - GA and AS drawings used in the installation process
 - RAMS for the works
 - Quality plan issue by the design team
 - Pictures relevant to demonstrate compliance to the RAMs and quality specific requirements
 - Specifications from the manufacturers related to product / equipment to be used e.g. torque / laser calibration certs, HILTY safety data sheet, etc.
 - Certification of testing conducted by externals – for instance for welding or pull-out testing
 - As built surveys