

HEALTH & SAFETY

**New Administration Building Construction,
Sintrupvej 13, 8220, Aarhus**

MIRETDESIGNS

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1. Introduction

1.1 General

The Health and Safety Plan (HASP) provides a general description of the levels of personal protection and safe operating guidelines expected of each employee or subcontractor associated with the construction works being conducted at the building site, located in Sintrupvej 13, 8220 Brabrand, Aarhus, DK. It shall be used as a rule book/guideline for running the construction phase in the safest way possible for all the workers on site.

This HASP identifies hazards known to be associated with the activities addressed in this document. The HASP Supplements will be generated as necessary to address any additional activities or changes in conditions which may occur during field operations.

The provisions of this HASP are mandatory for all personnel engaged in fieldwork associated with the works being conducted at the subject site. A copy of this HASP and any applicable HASP Supplements shall be maintained on site and available for review at all times. Record keeping will be maintained in accordance with this HASP. In the event of a conflict between this HASP and regulations, workers shall follow the most stringent/protective requirements.

1.2 Policy statement

It is mandatory that a healthy and safe working environment is provided to all personnel. Injury and illness prevention is of great importance.

The practices and procedures presented in this document are binding to all employees. In addition, all site visitors shall abide by these regulations.

1.3 Site introduction and training

Site induction, training and information are vital to securing health and safety on site. The Main Contractor has to ensure, so far as is reasonably practicable, that every worker has:

- (a) a suitable induction; and
- (b) any further information and training needed for the particular work.

2. Construction site

2.1 General Information

Full refurbishments works will be carried out at Sintrupvej 13, 8220 Brabrand, Aarhus. There is one administration building composed by 2 stories high, plus Basement and a terrace Roof. The building is owned by "Niels Nissen A /S" company.

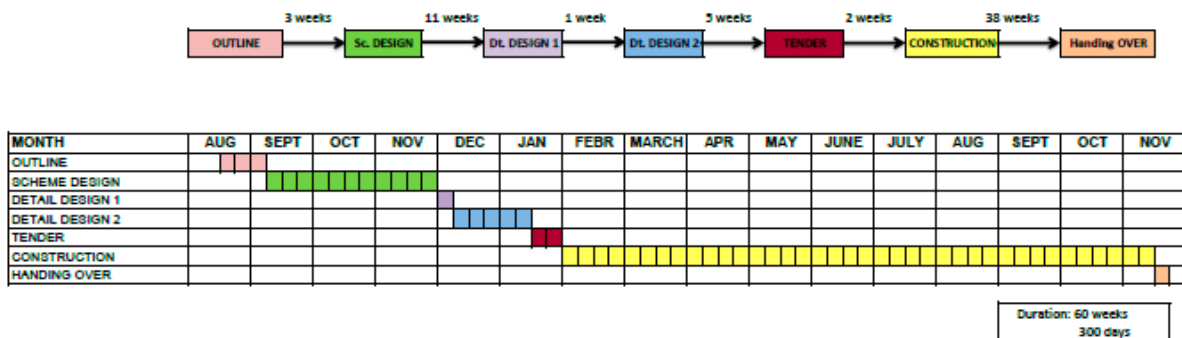
Also refer to the following drawings of the site and building site (also attached to this document):

- BDe_SP_01 – Building Site Plan
- BDe_SP_02 – Building Site Plan

The site manager organizes regular safety meetings to make sure that the site is operative with the appropriate health and safety measures. Each of the sub-contractors has to contribute to these meetings with a safety representative, which must have a compulsory education within the area of work environment and health and safety. The site manager on site must always be consulted in case of doubt of safe working measures on site.

2.1.2 Schedules

Below there is an overall schedule of the whole project:



Refer to **Project Time Schedule** to see the detailed construction schedule.

2.2 General risks

Construction work usually creates nuisance dust. The greatest amount of dust may be generated during dry dusting and sweeping. These practices should be avoided because they may lead to excessive dust in the work area, which may cause health related complaints from building occupants.

Construction can cause excessive noise. There may also be airborne exposure to welding fumes as well as carbon monoxide and fuel exhaust. Safety-related problems may include: dangerous traffic patterns; open construction areas; falling objects; unattended construction equipment; blocked exits; and disabled fire alarms, detection systems and emergency lights.

Refer below to the special conditions that should be used regarding the work environment:

- Areas where work can cause:
 - Dust or other forms of air pollution
 - Radiation
 - High/low temperatures
 - Noise
 - Problems with smells
 - Falling
 - Debris
- Areas where several types of work are performed:
 - Co-ordination
 - Securing against unnecessary risks from work
- Work tasks that can cause ergonomic strain:
 - Heavy lift (carrying, push, pull, etc.)

- Awkward working positions (twisting, etc.)
- Long reaching distances
- High/low clearance height
- Long transport ways for building materials
- Mounting elements
- Work on roofs, scaffolding, basic building structures and open constructions
- Technical aids:
 - Suitable type
 - Suitable roadways
 - Sufficient space conditions
- Special requirements:
 - Work processes with special requirements for chemical and poisonous substances, asbestos and cancer-causing substances.
 - All material shall comply with the Danish norms and standards and meet all requirements concerning health and safety.

2.2 Scope of the works

The likely scope of works includes demolition works of external facades and roof, asbestos removal both, the roof and indoors, heavy lifting, installation of steelwork, carpentry, roofing, electricians work, plumbing, welding works and ground works.

2.2.1 Access to site

There should be safe access onto and around the site for people and vehicles. Vehicles will be kept clear of pedestrians, especially at site entrances where it may be necessary to provide doors or gates to achieve this segregation. Doors that open onto traffic routes may need viewing panels or windows.

2.2.2 Welfare facilities

Everyone on site must have access to adequate lavatories and showers. A place for break time and consuming refreshments should be provided. Welfare facilities should be easily accessible to everyone on site. Number of toilets, showers and other facilities depends on the number of workers on site. A drying area must be provided. Adequate accessories must be provided.

Also rest facilities should be available if the nature of works requires so. It should be possible for non-smokers to use facilities without suffering from tobacco smoke. Space for storing personal belongings and changing must be provided. Drinking water must be made available.

2.2.3 Storage

All materials must be stored in an orderly manner and not cause risk of tripping or falling objects. Waste must also be managed in a timely and effective manner.

2.2.4 Light

There should be adequate lighting in all areas of the site. Where natural light is not available or is inadequate artificial lights must be provided.

2.2.5 Emergency procedures

Evacuation plan must be made. Firefighting tools and first aid must be accessible at all times. Emergency numbers must be clearly marked. Precautions for imaginable emergencies, such as fire or collapse, must be made. This includes handling, inspection and planning of work procedures. Site rules must be clearly established.

2.2.6 Scaffolding

Scaffolding is a work platform combined an electric drive system. Scaffolding must be put up in a safe manner and it must be provided to minimize risk of fall.

2.2.8 Working at heights

Use of protective equipment is mandatory. Minimizing consequences of falling must be made. All platforms must be inspected before using for working at heights. Safety harness should be used where there is no protective railing, or when it's not adequate.

Risk of overhead cables should be considered when working with a cherry-picker etc. All machinery should be maintained and inspected on regular basis. Safety nets and soft landing systems may be used where necessary. Working on ladders is prohibited.

2.2.9 Steel erection

Installing edge protection at ground level before steel members are lifted into position; ensuring erection is sequenced so that stairs and handrails can go in as early as possible to provide safe access to high levels of the structure; designing connection joints to make bolting-up easy; adding bracing, guys or stays into the design to ensure integral stability of the structure through all stages of erection; ensuring adequate information is passed on to inform erectors about special sequences that need to be followed to ensure stability

2.2.10 Site traffic

Access to lorries and such must be provided on stable ground. Turning place and adequate room must be ensured. Pedestrians must be provided with safe access ways as not to encounter a lorry. Adequate warning signs must be placed.

Scaffolding and site structures must be protected from traffic. Vehicles on site must be maintained and inspected. If possible, the safer alternatives must be considered when optioning the

machinery. Machinery with a blind spot must be equipped with mirrors, and if necessary with a warning drill.

Drivers, signalers and work force must be trained to deal with vehicles. Cooperation is the key to safety.

2.2.11 Lifting

Lifting must be done on a safe manner to personnel and structures. No lifting overhead. To avoid injuries it is mandatory that all lifting works are properly planned and controlled, and on site personnel notified. Lifting conditions must be good and visibility ensured.

2.2.12 Ground works

Ground works including excavations include risks to people falling in excavations or excavation walls failing and resulting to collapse. Edges of excavation must be protected with barriers. Excavations must be fenced off to reduce the risk to public.

2.3 Typical accidents

- Falls: People fall due to inadequate access to workplace or the work place is not safe.
- Mobile plant: People walking on site are killed or injured by moving vehicles due to poor soil conditions, eq. mud or the operator's inability to see.
- Falling material and collapses: In particular failed demolition and dangerous lifting works Walls can fail due to nearby excavations. Action must be taken to prevent these happenings. Scaffolds fail because of inadequate and unchecked connections or too great loading.
- Electrical accidents: Unsafe equipment causes shocks and burns and can lead to death. Also accidental contact with power lines during excavation works.
- Trips: Major cause of injuries. These are caused by inadequate conditions in access ways, such as corridors, stairways and footpaths
- Asbestos: Exposure to asbestos can cause serious respiratory diseases and cancer.
- Manual handling: Lifting heavy and awkward loads causes back and other injuries. Also long term heavy lifting causes problems.
- Noise and vibration: High levels of noise can cause loss of hearing and other hearing problems. Using vibrating tools can cause damage to nervous system of hands.
- Chemicals: Exposure to toxic and harmful materials on site. Examples of harmful materials are cement and solvents.

3. Company Organization

The project's stakeholders are following:

- **The Client: NIELS NISSEN A/S**
Address: Sundvej 25, 8700 Horsens, DK
- **Design Manager & Consultant with field of responsibility: Miret Designs**
Address: Chr. M. Østergaards Vej 4, 8700 Horsens, DK
- **Project manager: Cristina Miret Roman, Miret Designs**
Address: Chr. M. Østergaards Vej 4, 8700 Horsens, DK
- **Main Contractor: Alberto Vilar Bustos**
Address: Chr. M. Østergaards Vej 4, 8700 Horsens, DK
- **Safety Co-ordinator: Site Manager**
Address: Chr. M. Østergaards Vej 4, 8700 Horsens, DK
- **Site Inspection: Miret Designs**
Address: Chr. M. Østergaards Vej 4, 8700 Horsens, DK

3.1. Distribution of responsibility

The project manager is the one who is responsible for the supervision of the work in the building site, and the same person will also have the responsibility for preparation of health and safety plans, as well as coordination of health and safety on the building site.

Every single employer can take part of one project or more projects at the same time.

The project manager will be responsible for the following health and safety activities:

- Prepare and maintain the companies own health and safety system, and following up the subcontractors system for this.
- Planning and arrangement of the building site
- Planning and arrangement of the companies health and safety plan
- "Starting up" phase and transition of every single kind of work
- Carrying through the whole project examination included the project examination meetings with delivery to the subcontractor
- Coordination of subcontractors

The health and safety coordinator is the person responsible for the company's health and safety system, also that the third point is being followed, together with:

- A written agreement available between the client and Site manager.
- A written agreement is available between the client and Site manager when it comes to the delivery of applications for the final work and update on the health and security plan in main contract.

3.2 Subcontractors.

Subcontractors are responsible for planning, execution and documentation of the agreed security activities in the work process.

3.3 Own enterprises.

For own contracts there will be appointed a supervisor which is responsible for the execution of the specific security activities.

4. Safety System

The companies system to control safety and working environment is done with the following steps:

- Present a safety and health manual for Site manager specifying the general procedures to be followed.
- A description of the Health and safety manual for the project with specific activities and information.
- This specific projects health and safety manual contains the result of that the procedure of Site manager health and safety manual has been followed and fulfilled.
- Planning of time schedule and health and safety activities on site plan.

4.1 Personal protective equipment

Gear appropriate to the trade must be worn. All personnel is in addition required to wear a protective helmet and safety shoes. In risky works, other additional protective equipment can be specified. Goggles and safety spectacles must be worn when using a nail gun, when there's a risk of sparks, when welding and when there's a possibility of chemical splashes.

Proper clothing must be provided. Clothing must provide adequate protection to the conditions of the site and be of high visibility. Gloves must be worn as they protect against dust, wood particles and can protect against cuts. A range of gloves should be provided, trade specific.

4.2 Insurance

Insurance must be provided for all personnel on site prior to beginning of works.

5. Planning Phase

5.1 Planning phase

Planning phase is defined as the time between the contract is signed and the building process starts.

The project goes through with the following purpose:

- To divide the safety and health work, and delegate the work on the relevant enterprises.
- To, in general, fulfill all the previous mentioned demands.
- To get the extent of the building installation planned.
- To get the extent of the common access routes and necessary lighting determined.
- To secure that technical remedies can be used.
- That the storage places are appropriated placed and arranged.
- That garbage can be collected and removed.
- To avoid that dangerous work areas and common areas are mixed.
- To in general fulfill all the previous mentioned demands.

6. Execution Phase

6.1 Execution phase

Execution phase is defined as the time that starts when the building process starts to the delivery of the building.

6.2 Project “go-through”.

On the project go through meeting which shall be hold with establishment of a new building site, and with the start of new subcontractor, is the following topic on agenda.

- “Go-through” of the safety plans structure.
- Presentation of the building sites organization.
- “Go-through” of the individual’s safety and working environments task.
- “Go-through” of working tasks which are combined with special risk.

6.3 Security meeting

There shall be security meetings once a month with the official security organization and all the people who are involved.

On the weekly site meeting the security and environment has to be one of the standard subjects.

6.4 Updating of the health and safety plan

The safety & health will be updated on every site meeting and security meeting.

Changes that are decided on the weekly and monthly meetings have to be registered and sent to the official security organization.

The changes in the health and safety plan have to be sum up on every monthly security meeting.

7. Delivery Phase

The delivery phase is from the declaration of the finish work to the delivery contract and repaired work is done.

7.1 Analyzing of security work

On the last security meeting it will be an exchange of the experience on the building phase.

- What kind of problem has existed and the dimension of it.
- List up what kind of solution that has been chosen.
- Different ways to solve the problem, and any better solution.
- The experience will be kept in the company for projects in the future.

7.2 Dissolving of the safety organization

When the building is delivered, mistakes and lacks are fixed and the security work is analyzed, then the safety organization can be dissolved.

8. Appendix

8.1 List of most important current security measure on the building site:

- Nobody is allowed to access the building site without wearing hard hat and shoes with protected steel tip.
- There shall be put up fences around the building site, with clearly visible signs for unwanted visitors.
- There shall also be put up clearly visible signs which show where the escape routes are situated, in case of emergency episodes.
- There shall be put up signs which clearly tell everybody what kind of safety equipments that is necessary in the different zones on the building site. There shall also be put up signs on the building site about where to find the first aid box. There shall also in specially situations be put up signs about what kind of work is being done, to protect the people around.
- There shall be used ear protection in all situations where the sound level is exceeding 80 dB and the sound level shall not exceed 85 dB on the building site. The sound level shall not exceed 50 dB 5 meters outside the fences.
- All workers on the building site have responsibility of keeping the building site clean, in this way we will prevent accidents and injuries.
- All employees will have to take care about the garbage sorting and as previous mentioned keep the areas of garbage sorting clean.
- People working on the roof of the building, or in other cases working in critical places high above the ground level, shall be using safety harness, to protect them from falling down.
- Everybody is responsible to secure open holes during the building phase, to protect other workers on the building site from falling down into these holes.
- All places where the height down to the ground level is more than 2 meters, shall be equipped with temporary railing, to avoid workers from falling down.
- It is forbidden for all workers/people on the building site to stand or walk underneath a crane that in the moment is transporting loads.
- All accidents or nearly accidents shall be reported in to the record of the building site, the reason that we want to have a system for this, is to avoid accidents in the future, after having this experience.
- In all tasks in connections with chemicals or other dangerous materials, there shall be used safety masks.

8.2 list of most important current security signals on the building site:

General Information:



Obligatory signs:



Wear safety glasses



Wear sound protection



Use safety harness



Wear masks



Protective footwear must be worn

Warning signs:

