

**Professionalising site managers and team leaders in the specific management**

**of** **building renovation sites in Europe**

Contract Nb. 2020-1-FR01-KA202-080105 (2020-2023)

**IO1: Transnational model for the positioning, support and professionalisation of site managers and team leaders for building renovation sites**

**IO1-A1. In-depth analysis of the technical, organisational and normative specificities of building renovation sites which affect the evolution of the functions of site managers and team leaders on these sites.**

**IO1-A2. Identification of the specific skills expected of site managers and team leaders by companies specialising in building renovation.**

**Productions related to IO1 – A1 & A2**

**France**



Paris, 25 February 2021 (Desk Research)

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# **IO1-A1. In-depth analysis of the technical, organisational and normative specificities of building renovation sites which affect the evolution of the functions of site managers and team leaders on these sites**

## Synthesis of the Desk Research findings

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| **Executive Summary**(max 1 page)* Brief presentation of the national desk research: method, key actors, resources exploited, accessibility of data, main issues encountered, surprises, etc.
* Main conclusions regarding the aspects that affect the evolution of the functions of site managers and team leaders on renovation sites in your country.
* Main recommendations for the training paths to be developed.

The desk research focused on the exploitation of the most recent resources available on the websites of French professional organisations, the analysis of legislative resources, the study of classified ads to identify the profiles sought in the labour market. The study also covered the research and analysis of training offer, most often extracted from the websites of the training bodies concerned, addressed to site managers and team leaders working on renovation sites. The data sought was numerous and easily accessible. Some, mainly concerning the profile of site managers and team leaders, were verified directly with representatives of professional organizations, without waiting for their formal intervention in the framework of the expert group («focus group») planned for the end of February 2021. Surprisingly, environmental issues are the very predominant challenge, even to the detriment of health and safety issues, work organization or on-site communication.We realise that the issue of renovation in our country is currently very much focussed on the **application of circular economy and energy efficiency standards** to renovated buildings, while health and safety issues on the building site, communication, digital skills or new technologies are emerging less frequently from our desk research. What is most important for the professional federations and companies is the **global approach to renovation** and the skills required from worksite managers and team leaders aim, above all, at understanding the **systemic and complex approaches on renovation sites** (mixing technical aspects, new energy and environmental standards, communication on site and with customers, etc.).The **demand on the labour market for middle managers on renovation sites is great in** France and often not met, due to a lack of well-prepared candidates for the specific nature of these sites (according to the professional organisations, this demand will grow in the coming years). The professional organizations of the building sector in France focus on **three fundamentals** that should characterize site managers and team leaders working on renovation sites:* The transmission to companions/workers of the **theoretical, cultural and historical knowledge** of the building, the evolution of styles and decors, while respecting, at the same time, the specificity of the old, the use of new equipment and new materials, and new environmental, safety, etc. constraints.
* The transmission to companions/workers of a **methodology for observing and applying local know-how** (materials, coatings, decoration), adapting them to the new organizational, technical, environmental and safety requirements on site.
* The ability **to evolve the traditional techniques** mastered by companions/workers according to new environmental contexts, new uses and new customer preferences, while choosing suitable materials, working methods and organisation.

The **training offer addressing these target groups (initial and continuing) is relatively abundant**, but it must be screened to identify whether it corresponds sufficiently to companies' expectations. According to the training guidelines found on the websites of professional organisations, the most frequently cited training priorities are:* **Comprehensive approach to renovation projects**: complex management of different jobs on site, compliance with the old while applying the new standards of safety, energy saving, accessibility to premises, etc.
* **Energy retrofitting and upgrading** to reduce (or rationalize) energy use.
* **Compliance with circular economy requirements**: waste management and recycling, use of recycled materials, etc.
* **Human resources management and communication organisation** within the team and on the renovation site, as well as the hierarchy, external partners and customers.
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| **Key areas of investigation** | **Synthesis of the Desk Research findings****(descriptive part)** |
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| 1. Definition of ‘building renovation sites’ in each national context
 | **French definition of a renovation site**Derived from the Latin word *hereditas* (in French, the legacy of the father), heritage refers to the property inherited from the ascendants, gathered and preserved to be passed on to future generations. To ensure this conservation is the very object of the **protection** of the built heritage (belonging to historical monuments or not).**Renovation** refers to the operations by which a building or one of its components has its condition improved, using new, modern materials, replacing damaged or obsolete parts. A renovation is sometimes part of a conversion or restructuring plan.The definition of renovation differs from that of **restoration**, which is understood in the French context as a restoration to the initial state, and **rehabilitation**, which aims to reopen a closed place, or still open but more to the standards of the day (*Sources: FFB and CAPEB publications*).However, rehabilitation and restoration can be considered as special forms of renovation.The renovation can range from the sole renovation of the facade of a building (public or private) to its complete renovation.Thus, the renovation may concern :* Structural work that contributes to the solidity and stability of the building (foundations, load-bearing walls, frames, floors, etc.).
* Finishing work that combines everything from the roof to the windows, including electricity, plumbing, painting and tiles.

**Possible aims of a renovation:** * A public building or a private house better suited to the expectations of its users (e.g., modernization of the design in accordance with changing tastes or new assignments).
* A more comfortable public building or home with refreshed paint, facade restoration, improved thermal performance, more rational spaces, etc.
* A larger living area due to the expansion of existing spaces.
* A public building or a private house that is more economical and more ecological due to a restoration of standards: better insulation following a thermal evaluation, or in line with the processes of the circular economy (recycling, reuse of old materials).

Types of renovation:* Overall
* Thermal insulation
* Extension and expending of a floor
* Etc.

Examples of renovation projects: * Existing residential housing stock (housing, including social)
* Buildings for tertiary use (including public buildings, theatres, etc.)
* Sports buildings (sports halls)

(*Source: various presentations made on the internet by companies that define themselves as specialized in the renovation of buildings).* |
| 1. National Legislative framework and policies related to Renovation of Buildings.
 | **The law of August 4th, 1962** (known as the “**Malraux Law**”, named after the Minister of Cultural Affairs) facilitates the restoration of real estate and introduces the notion of safeguarded sectors. Delimited by ministerial decree, they ensure the safeguarding and development of coherent urban complexes. They will become “remarkable heritage sites” in 2016. Churches and castles make up most historic monuments. However, from the 1970s onwards, protection was extended to other categories of property and to all chronological fields: gardens, 19th and 20th century buildings, industrial, scientific and technical heritage (factories, buildings and railway structures, boats, trains, planes, cars, scientific collections).The [**Local Freedoms and Responsibilities Law of August 13th, 2004** transfers:](https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000000804607&categorieLien=id) * to the regions the responsibility for the conduct of the General Inventory of Cultural Heritage, founded in 1964 by André Malraux.
* to local authorities who request it, the ownership of historic monuments belonging to the state.

*Source :* <https://www.vie-publique.fr/eclairage/273873-la-protection-du-patrimoine-monumental-francais-un-etat-des-lieux>Regarding **the thermal regulation of existing buildings**, it shall apply where renovation work is planned. The objective of this work is to improve the performance of the building by implementing new products and more efficient equipment. The regulatory measures are different depending on the size of the work undertaken.The **global thermal renovation «RT global»** is defined by the **decree of June 13th, 2008** relating to the energy performance of existing buildings of Net Surface greater than 1,000 m2. It applies to existing buildings that simultaneously meet the following three conditions:* A Net Surface > 1 000 m2.
* Completion date of the building to be renovated after January 1st, 1948
* A cost of the thermal renovation work decided by the contracting authority exceeding by 25%, the building value excluding land value.

Where the building is subject to the RT global, the contracting authority shall carry out, prior to the filing of the building permit, a technical and economic feasibility study of the various energy supply solutions for the building. This should make it possible to encourage the use of renewable energies and the most efficient systems. Minimum performance is required for different components (insulation, ventilation, heating system, etc.), when these are modified by renovation work : it should lead to a 30% increase in primary energy consumption compared to the previous state. For all other renovation cases, **the thermal regulation «element by element» defined by the decree of May 3rd, 2007 and modified by the decree of March 22nd, 2017** applies. When the contracting authority decides to replace or install a new component, it shall choose a product whose performance is greater than or equal to the minimum characteristics defined in the decree.In addition to these regulations, the Energy Transition for Green Growth Act of 2015 (ETGGA, see below) created an obligation to install thermal insulation during building major renovations, such as facade or roof repairs. The Implementing Order is that of May 30th, 2016, relating to "insulation work in the event of facade renovation, roof rehabilitation or fit-up of premises with a view to making them habitable".This measure makes it possible to take advantage of a work project to add energy improvement work, by pooling resources and associated costs: construction facilities, administrative records, waste management, etc. This application, which came into effect on July 1st, 2017, applies to tertiary offices, teaching and commercial buildings and hotels. The performance levels to be achieved must comply at least with the thermal regulation "element by element".*Source :* <https://www.ademe.fr/sites/default/files/assets/documents/costic-brochure-guideademe_d_2_col-8.pdf>)Launched in 2013, **the Energy Renovation Plan for Housing (ERPH)** sets out the expected annual targets for the massive renovation of the existing building stock, with several priorities, including the fight against energy poverty. At the national level, the building sector accounts for 24% of greenhouse gas (GHG) emissions and 44% of final energy consumption. The national goal of dividing GHG emissions by four in 2050 requires massive renovation of the existing building stock. The ERPH has set annual targets for housing renovation:* Starting in 2014, 180,000 private dwellings, including 38,000 occupied by people living in precarious situations, plus 90,000 social housing units.
* Starting in 2017, 380,000 private dwellings, including 50,000 occupied by people living in precarious situations, plus 120,000 social housing units.

Thus, the ERPH aims to:* Fight against energy poverty.
* Inform and guide individuals on home renovation opportunities.
* Structure the economic chain of renovation, which is highly job-creating.

*Source :* <https://www.ademe.fr/expertises/batiment/elements-contexte/politiques-vigueur/plan-renovation-energetique-lhabitat-preh>The **law of August 17th, 2015 on the energy transition for green growth** (also known as LETGG or «Energy-Climate Law») sets as objectives both the reduction of energy consumption and the use of low-carbon and diversified sources of mixed energies. This law covers the most diverse sectors of economic and social activity, including waste sorting, construction of new buildings and renovations, installation of windmills, energy consumption and energy poverty, industrial sectors, etc.**Part II of this Law concerns a better renovation of buildings** to save energy, lower bills and create jobs. It contains the following articles:* Section 3: energy retrofit target of 500,000 homes per year[[1]](#footnote-1)
* Section 7: derogation from town planning rules for the benefit of insulation works
* Section 11: digital Housing Monitoring and Maintenance Booklet
* Section 12: minimum Energy Performance Criteria
* Section 20: energy Retrofit Guarantee Fund
* Section 26: individualization of Building Heating Meters
* Section 30: energy saving certificates

**Part IV of this Law concerns the fight against waste** and the promotion of the circular economy. It contains the following articles that affect building renovation projects:* Section 70: transition to a circular economy aimed to waste prevention and a waste recovery policy.
* Section 78: recovery of construction waste and prohibition of deposition and burial on agricultural land.
* Section 82: obligation to characterise waste
* Section 93: recovery of construction waste
* Section 94: free return of construction waste
* Section 96: sorting at source

The **law of July 7th, 2016**, on the freedom of creation, architecture and heritage, modernizes the modalities of protection of heritage. State and local authority funds, subject to budgetary constraints, are well below needs. They must therefore be supplemented by private funds. The ***Heritage Foundation***, an independent private organization created in 1996, helps to safeguard and enhance local heritage (rural, religious, industrial), which is **primarily unprotected**. Its action is based on:* public subscriptions and calls for donations to finance projects
* call for corporate sponsorship (national or local partnerships with companies)
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| 1. Definition of the specific role and profile of site managers and team leaders in building renovation projects in each national context (today and in the future).
 | **There are three site management positions in France (*Source: FFB*):*** **Team Leader**, very qualified and close to the field, is the leader of a small group of companions. He is in charge, with his team whose activities he organizes, of missions such as built a part of a building or put back into service a faulty installation.
* **Site Manager** supervises all site production staff, determines with team leaders the tasks assigned to them to complete the project. The human aspect of this position is essential: this very good technician, attentive to quality and deadlines, must know how to lead and animate a team.
* **Operational Supervisor** supervises one or more site managers. In addition to his hierarchical responsibilities, he ensures the financial management of the site, organizes supplies. Creative on a technical level, he dialogues with the master developer and architect as well as with the other partners of the act of building. He knows how to decide and delegate.

**Specificities of site managers specialised in building renovation:*** Knowledge of how to identify and categorize renovation projects and, within this framework, knowledge too of how to identify and categorize the buildings to be renovated: year of construction, type of materials, mode of construction.
* Knowledge of how to manage renovation projects of different sizes, different budgets, with constraints specific to each building (mastery of technical and organizational quality standards).
* Knowledge of how to prepare and optimize the opening of a renovation project: choice of materials and delivery schedule.
* Be versatile to understand the profile, size and complexity of renovation projects.
* Ability to combine the constraints of old buildings with new requirements: being sensitive to the preservation of the original aspects of buildings (aesthetic and artistic dimensions), ability to find compromises between old and modern techniques (standards, materials, environmental compliance, etc.).
* Ability to analyse his/her environment to identify the constraints to be considered: adapting to unforeseen events, weather, management of the complexity of cultures, of experiences and jobs in the specific context of renovation projects, failure or delay in delivery of materials, etc.
* Relational ability to communicate with specialists from different trades working on renovation projects and to positively manage complex relationships with subcontractors.
* Ability to organize the flow of information on the renovation site, with a focus on specific points for this type of site.
* Sensitivity to cost control (equipment cost slippage is common).
* Ability to manage several projects simultaneously, each with its own characteristics (nature of the project, heterogeneity of teams and subcontractors, considering specific constraints, etc.).
* Ability to be a proposal force for the organization of projects: choice of teams, materials, and equipment to use, etc. in a “non-standard” environment.
* Ability to secure the buildings to be renovated and make them accessible by setting up the necessary precautions to preserve the building on the one hand and the teams on the other hand during interventions.
* Ability to implement sustainability standards in a renovated building: analysis of the thermal, seismic, and acoustic properties of older buildings for their upgrading.
* Ability to organize waste management and resource savings on site with re-use of materials.
* Manage the closure of renovation sites.

**Specificities of team leaders specialized in building renovation:*** Ability to combine the skills of multiple building trades, as well as to diagnose the works regarding the buildings to be renovated, to select the materials to be used.
* Ability to preserve original building features and use old techniques to recover original aspects.
* Situational analysis ability and ability to adapt and manage unforeseen events (weather, worker reactions, delivery delays, technical constraints not initially identified, etc.).
* Ability to manage workers who speak different languages, come from different cultures and have different work and life experiences.
* Permanent adaptability: carrying out tests to obtain the same colours, testing several techniques to mount scaffolding, insert new in old, difficult to do, while preserving it (be as discreet as possible, particularly regarding the interventions for electrical installations, heating, etc.).
* A certain versatility in the profile of construction sites and renovations.
* Ability to mix old and new techniques, be open to innovation while respecting the old.
* Place his/her intervention in an eco-responsible approach.
* Respect and enforce waste management and resource savings on site.
* Respect and enforce the constraints of each trade.
* Monitor facility safety and diagnose malfunctions (scaffolding, safety equipment, co-crew behaviour, etc.).
* Understand specific manufacturing processes (e.g. mouldings, insulation associated with a stone facade, electrical installations in “non-standard” contexts, etc.)
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| 1. Identification of technical challenges and barriers faced for site managers and team leaders related to building renovation sites, including skills needs related to energy saving and circular economy (today and in the future).
 | **The challenges faced by site managers and team leaders on building renovation sites in France:***Source :* <https://www.batiactu.com/edito/artisans-batiment-ont-beneficie-reprise-fin-2020-61051.php?utm_source=cc_alert&utm_medium=email&utm_content=>1. **A comprehensive approach to building from a sustainable construction perspective**

To meet customers' expectations and keep their trust, companies and craftsmen must be able to propose a global analysis, integrating the cross-cutting dimension of the energy performance of buildings: improvement of the insulation of the envelope, energy efficiency of technical equipment, use of renewable energy and building maintenance.This is called the global approach, which has become unavoidable today. This global approach could then be translated into **renovation works plans** (works spread out over time, to reach the Low Energy Building - LEB level) or **a global renovation offer** (works carried out at once).This concerns any renovation that, while ensuring the quality of life of the occupants, controls its impact on the environment and ensures optimal energy performance, using as much as possible renewable energy and natural and local resources. It is also called **eco-construction**.Far from being a fashion effect, the stakes are considerable. Creating and promoting a different, energy-efficient and environmentally friendly home is a major concern for building companies, including those specializing in renovation work. These companies must propose works that allow, among other things, **energy savings** (evaluable with the **tool OREBAT**, a computer program which allows to appreciate the savings generated by the renovation works) and the **indoor air quality**, while implementing **low-level nuisance sites** and **good site waste management**.1. **Control of energy performance of existing buildings**

The objective is to contribute to reducing the average consumption of the housing stock and to have, by 2050, a park which all the buildings will have been renovated at the level of the label Low Energy Building - LEB renovation or assimilated. In this context, the entire **social housing** stock will have to be renovated eventually. In addition, **all private residential buildings** with primary energy consumption exceed 330 kWh/(m²/year) will require energy retrofits before 2025. **Buildings for tertiary use** or in which a public service activity is carried out will also have to carry out energy improvement works. The work will include:* insulation of the envelope,
* replacement of joinery,
* installation of mechanical ventilation
* heating system improvements and its regulation
* domestic hot water production (CSW)
* the use of renewable energy (REn)
1. **Site waste management**

In France, over 90% of **the waste from the building** comes from demolition and rehabilitation works and the rest from new construction (*Source: FFB*). 73% are inert waste (rubble, concrete, tiles, etc.), 22% are non-hazardous waste (plaster, wood, plastics, etc.) and 5% are hazardous waste (asbestos, solvents, etc.).Prevention, on-site sorting, recycling, reuse are all levers that contribute to the establishment of a circular economy for a more efficient use of resources.There are scenarios for setting up an organisation for the efficient management of building waste in a circular economy, promoted by professional organisations in the construction and waste sector.See <https://www.ffbatiment.fr/Files/pub/Fede_N00/MINISITE_ECO_CONSTRUCTION_3374/> 1. **Control of work to improve indoor air quality**

The development of buildings with high environmental and energy performance sets a double challenge: to reduce energy consumption and greenhouse gas emissions, by limiting losses related to ventilation, while maintaining good indoor air quality. Indoor air quality is therefore a major issue, as is outdoor air quality. There are two main principles to ensure good indoor air quality: limiting the emission of pollutants and ensuring efficient air renewal.Coordinating the work to achieve good indoor air quality, consistent with the overall sustainable construction approach, is another challenge for site managers and team leaders working on building renovation projects. |
| 1. Identification of legal and normative challenges and barriers faced for site managers and team leaders related to building renovation sites
 | Actions to reduce energy consumption are considered to be the first challenges and the current regulations focus on this aspect. Thus, the challenges identified are:* energy performance of the building
* the installation of appropriate energy-efficient equipment, control and active management of such equipment
* equipment operating procedures
* adaptation of premises to energy-efficient use and behaviour of occupants.

To address this, the **Action Programme for the Quality of Construction and the Energy Transition** (APCET), was launched in France at the beginning of 2015 by the public authorities with the collaboration of the FFB (professional organization of employers in the sector). Its aim is to support the development of competence of building professionals in the field of energy efficiency, to enhance quality and reduce claims history.Three main lines of work have been established:* support the development of knowledge
* enhance the modernization of the Rules of Building Art and the provision of practical and modern tools adapted to the practices of professionals
* strengthen relations with the local territories around the development of professional skills.

At the same time, renovation companies must improve the skills of their teams and **be recognized as Environmental Guarantor (EGR Qualification**) enabling customers to identify companies and artisans with expertise in energy efficiency and/or renewable energy. To obtain an EGR qualification, contractors must demonstrate their technical and financial ability to perform a given activity. They must prove their skills in energy efficiency and/or renewable energy. They are now subject to on-site design checks to confirm their company’s know-how, both in their achievements and towards their customers. To obtain the EGR label, professionals must follow a training (BEST system[[2]](#footnote-2)) and commit to a quality charter. It is mandatory to use one of them to receive financial aid that the French State earns for energy renovation works. |

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| 1. Identification of managerial/ organizational challenges and barriers faced for site managers and team leaders related to building renovation sites, including digital skills today and in the future.
 | **Personal skills (for Site Managers and Team Leaders)*** Taste of the challenge: to manage the constraint and perceive it as a potential field of initiative to find new solutions.
* Sensitivity to the comfort of the client/user, whoever he/she is (person in a retirement home, child in a nursery, person with reduced mobility, etc.).
* Good interpersonal skills in complex or even conflicting situations, ability to compromise and convince (teammates, customers, hierarchy).
* Ability to manage conflict (both with companions and with hierarchy), in connection with adaptability and open-mindedness
* Perseverance and a particularly developed sense of responsibility (indispensable to manage complex situations or a search for compromise between the «modern» technical/organizational constraints and the «old» realities which are constant on this type of site).
* Strong organizational skills.
* Willingness to progress in work and ability to derive personal satisfaction from it. Determination in the achievement of objectives, quality being a personal value.
* Open-mindedness and curiosity in the work.

New markets linked to energy renovation are exceptional development opportunities that offer real prospects for the future. However, they require an adaptation of the offer to customers and practices in the approach to the site.All trades and functions on site are concerned by an energy dimension that complements their core competencies. It is a **source of added value**, **integrating the advisory relationship with their clients**. The energy improvement consultancy is thus expected to develop very strongly.*Source : Analysis of classified ads published by employment agencies and reviewed by experts from the FFB (training directorate)* |
| 1. Identification of skills needs of site managers and team leaders in building renovation sites related to health and safety rules on worksite (today and in the future).
 | The documentary sources studied mainly focus on the development of the capacities of business managers, construction managers, site managers, but also of team leaders to control, each at its own level, a global approach to building or at least to be aware of participating in this global approach, integrating, among other, the cross-cutting dimension of the energy performance of buildings (current priority):* improved envelope insulation (structural work
* energy efficiency of technical equipment
* use of renewable energy
* maintenance of the renovated building in compliance with new standards

This global approach could be translated into the ability to propose to customers either renovation plans (works spread over time, in order to achieve, in the end, the LEB level), or a global renovation offer (works carried out in one time).Considering these needs of renovation companies, the training offered in France therefore aims to adapt professionals to the specificities of the rehabilitation market (materials, techniques, maintenance/repair) by integrating a sustainable intervention approach, offering traditional methods, tools and techniques to integrate and transmit the new requirements of the renovation or rehabilitation market.However, the desk research did not make it possible to accurately identify the expectations of companies regarding occupational safety and health, digital skills or skills in communication, conflict resolution or customer approach. This aspect will have to be explored further in the in-depth discussions |
| 1. Existing training provision in relative areas/ State-of-the-art training programmes in building renovation sites.
 | The training offer to target audiences is relatively extensive. It is both **initial** and certifying (intended for young people and people undergoing vocational retraining) and **continuous** (intended for company employees and for people seeking vocational retraining).**(1) Name of the training**: **Professional Companion Heritage Mason****Duration**: 120 days (840 h), or 15 days/month in alternating **Type**: continuous training (you must already be a mason)**Level**: III**Developer**: École d ’Avignon**Goals**: a specialized qualification in the built heritage sector, allowing to acquire the cultural and historical knowledge of the built, the methodology of intervention, the implementation and the maintenance of traditional techniques in the framework of a work in heritage environment.**Training content**:* Traditional techniques and methodologies for heritage intervention (rehabilitation, restoration, or conservation)
* Organizing and managing teams
* Communication
* Safety

**Validation**: Professional Qualification Certificate (PQC) as part of the National Building Workers Collective Agreement and validated by the Parity National Employment Commissions. **(2) Name of the training** : **Team leader for the structural work** **Duration**: 490 hours in alternating (indicative and adjustable duration according to people’s needs )**Type**: continuous training **Level**: IV**Developer**: AFPA (Association for Adult Vocational Training)**Goals**: to prepare for the job of team leader for the structural work, which consists of two functions: the first, technical, oriented to the realization of works. For this purpose, it is likely to use the BIM tool or the digital model. The second, managerial, is oriented towards the communication and animation of the team.**Training content**:* working with his team on the structural work
* organization of day-to-day work of the structural work team
* execution of the structural works entrusted to the team
* review of the team’s daily production
* dialogue with team and hierarchy
* animation of his/her team

**Validation**: Professional title issued by the Ministry of Employment and registered in the NDPC[[3]](#footnote-3).**(3) Name of the training**: **Sustainable Construction Team Leader****Duration**: 2 weeks in a company and 1 week in the VET centre, or around 900 hours of training overt 2 years, 75% of which is technical and 25% theoretical. **Type**: initial apprenticeship training**Level**: IV**Developer**: Chamber of Commerce and of Territorial Industry (CCTI) of Drôme. Training provided at the PTC[[4]](#footnote-4) of Sainte-Barbe (Loos-en-Gohelle 62)**Goals**: The **Sustainable Construction Team Leader** can prepare, organize and implement an insulated and airtight envelope while respecting the principles of sustainable development. The training will enable him to acquire the technical learnings:* Elaborate building diagnostic
* Lead the interventions
* Plan and organize a construction site, ensuring the principles of eco-construction are respected
* Lead and perform work
* Identify the parameters (obtain the best thermal performance)
* Learn and communicate

**Training content:*** Thermal and hygrometric characteristics of the frame according to the characteristics of the materials constituting it, the plans and the environment of the frame, considering the statutory instruments
* Diagnosis and proposals of thermal target of the building (renovation or new)
* High-performance technical solutions to achieve energy goals
* Implementation of building envelope techniques (insulation, air tightness, duct clearance) with workers who are supervised by the team leader
* Summary report upstream and downstream of the operation, prepared with the various means of information and communication available

**Validation**: Professional title issued by the Ministry of Employment and registered in the NDPC **(4) Name of the training**: **Building site coordinator and manager** **Duration**: 1 908 hours (977 hours in training centre, 931 hours in company) **Type**: apprenticeship or continuing training **Level**: V**Developer** : Companions’ Federation of the Building Trades (FCMB), Agen, Companions of the French Tour**Goals** : this training enables access to high-responsibility positions regardless of the type of business, including in the field of renovation. Due to his technical skills and his great autonomy, this technician will quickly become the pivot of the structure: either as the «right arm of the entrepreneur» in a small or medium-sized company either as an essential link in larger teams in large companies.**Training content:*** Respond to public and private calls with BIM and digital mock-up
* Prepare and follow worksites. Develop quality human relations, intra and extra enterprise
* Apply and enforce new technologies for operations initiated under the HEQ[[5]](#footnote-5), LEB[[6]](#footnote-6) (Constraints of RT 2012) or "Passive Houses" (RT 2020 Guidelines)
* Manage the digital transition applied to renovation projects.

**Validation**: Professional title issued by the Ministry of Employment and registered in the NDPC**(5) Name of the training**: **Building and public works site manager** **Duration**: 65 days/year over 24 months **Type**: alternating**Level**: V**Developer**: Centre for Industrial Studies (CESI)**Goals**: learn, as a future site manager, to ensure the smooth running of a worksite (preparation, organization, monitoring, control) providing its supply and materials and coordinating the various tasks performed by the different trades working on the site. In a logic "All bodies of trades", the Site Manager has a global vision of the worksite allowing him to efficiently coordinate the actors of the site. The human aspect of this function is essential. He/she must be able to lead and entertain a team while meeting the client’s requirement, deadlines and budget.**Training content**:* Define the key stages of the construction site completion (new construction or renovation, including residential housing, tertiary buildings, rehabilitation of industrial sites, extensions, etc.)
* Measure the needs and material requirements
* Define the staff qualifications required for the various tasks of the worksite
* Identify the risks of the construction site regarding quality, safety, environment and Labour Law, the adaptation of materials to planned activities, etc.

**Validation**: Professional title issued by the Ministry of Employment and registered in the NDPC **(6) Name of the training**: **Management of Built Heritage** **(GEPABA)****Duration**: 2,575 hours of vocational training and 582 hours of university training (over two years)**Type**: initial alternance training **Level**: V**Developer**: University Institute of Trades and Heritage (IUMP) Troyes**Goals**: become a building professional able to manage, among other things, a craft renovation company. The training enables trainees to enter positions ranging from the skilled worker to the construction manager to business leader. **Training content**:*Vocational training* * Vocational education: masonry, carpentry, thermal sanitary (852h + 739h)
* Price study: quotation, bill of materials (16h + 7h)
* Internships: 5 months over two years (280h + 420h)
* Computer Aided Design / Computer Aided Drawing (50h + 50h)
* Sustainable development and eco-construction (7 hours)
* Mathematics / Physics (50h + 80h)
* Practical Work (0h + 16h)

*University training* * Art History (16h + 16h)
* English applied to construction (12h + 24h)
* Law (120h + 112h)
* Commercial behaviour for VSE/SMSE building manager (54h + 0h)
* Company worksite accounting (54h + 0h)
* IT management (12h + 0h)
* Simulation of a construction company (Oh + 60h)
* Speaking and writing skills (12h + 0h)
* General methodology (12h + 0h)
* Conferences (12h + 6h)
* Economic, political and administrative environment (0h + 18h)

**Validation**: University Degree**(7) Name of the training**: Preservation and enhancement of built heritage **Duration**: 500 h (over one year) at university, vocational training centre and company**Type**: initial alternance training (professionalization contract or apprenticeship contract)**Level**: VI**Developer**: University of Cergy-Pontoise**Goals**: train specialists in the setting up and monitoring of restoration and heritage development operations (historical monuments, old buildings), mastering historical, technical and administrative aspects.Training content:* Recognition of architectural styles and identification of building materials and associated construction techniques
* Completion of preliminary studies ranging from the recognition of disorders and alterations to the explanation of their causes
* Definition and design of appropriate restoration protocols
* Development of enhancement files and management of built heritage assets (financial, legal and tax aspects)
* Knowledge of various heritage stakeholders
* Coordination of the various stakeholders of a restoration operation (historians, architects, elected officials, heritage technicians).

**Validation**: University Degree (Professional Licence)**(8) Name of the training**: **Construction trades: energy and environmental performance of buildings****Duration**: 2 semesters (university education and company)**Type**: initial alternance training (professionalization contract or apprenticeship contract)**Level**: VI**Developer**: University Institute of Trades Civil engineering sustainable construction of Bordeaux **Goals**: train specialists in the setting up and monitoring of restoration and heritage enhancing operations (historical monuments, old buildings), mastering historical, technical and administrative aspects.**Content of the training:** * Recognition of architectural styles and identification of building materials and associated construction techniques
* Completion of preliminary studies ranging from the recognition of disorders and alterations to the explanation of their causes
* Definition and design of appropriate restoration protocols
* Development of enhancement files and management of built heritage assets (financial, legal and tax aspects)
* Knowledge of various heritage stakeholders
* Coordination of the various stakeholders of a restoration operation (historians, architects, elected officials, heritage technicians).

**Validation**: University Degree (Professional Licence)*Sources :* [https://www.francecompetences.fr/recherche/rncp/](https://www.francecompetences.fr/recherche/rncp/30349/)<https://www.metiers-btp.fr/entrant-btp/entrant-btp/les-formations-certifiantes/>**Examples of short training courses for company employees:****The protected area old building energy rehabilitation project:** raise the awareness of the heritage building technicians to a global approach of energy improvement of the existing constructions by addressing the technological aspects of the project, both in the choice of systems and solutions recommended by implementing companies and in the proposal of methods and tools to better integrate the new requirements related to the improvement of energy consumption in the framework of Protected Area Renovation Project – 3 days (Avignon School)**Training Rehabilitation of old built heritage**: to provide entrepreneurs and their close colleagues with a better understanding of the old buildings, considering the local specificities and materials of the area, and to give them an overall vision of the restoration process and its actors, develop the capacity for analysis and advice, on the work to be carried out in a logic of cultural preservation of the building – 3 days (Avignon School)**“FEEBAT[[7]](#footnote-7) energy renovation training system:** a comprehensive and qualitative program of more than 20 training courses combining theory and practice of the gesture to guarantee essential technical skills on renovation sites. Staying abreast regulatory about changes and financial assistance to advise your clients. Knowing how to implement ever more efficient products. FEEBAT is four training courses dedicated to the energy renovation of existing buildings.”* FEEBAT MOD 5a—2 days /14 hours

**Analysis of the building, development of a program and design of the envelope**: identify the technical solutions for a performance of the envelope in case of renovation work by architects and contractors, choose the appropriate tool to assist the thermal renovation project.* + - Analysis of the building and of the users’ needs
		- Diagnosis of the existing
		- Major building renovation principles according to their typology
		- Different stages of renovation
* FEEBAT MOD 5b—2 days /14 hours

**Housing Energy Retrofit Strategy and Equipment:** diagnose the typologies of the equipment present in the building, to establish a scenario of renovation adapted to the building as well as to the users’ comfort.* + - Identification and size of equipment with the objective of energy performance and users’ comfort
		- Renovation scenarios in a global approach (envelope + equipment) and according to the requirements/priorities: energy saving, comfort, urgent works, heritage investment
		- Financial package of the project
		- Case studies with different building typologies
* FEEBAT MOD 6—2 days /14 hours

**To develop collaborative skills in the energy renovation of existing buildings**: to understand the different actions to be implemented in the framework of the energy renovation of a building and to coordinate the different actors.* + - Energy retrofit of an existing building using a systemic approach
		- Heterogeneity of the actors’ logic in this system: project manager, project manager, companies
		- Mediation and intercultural skills through the exchange of practices
		- Collaborative project management on the worksite
		- Responsibility and management of stakeholders’ interactions
* 2021 FEEBAT RENOVE—3 days/21 hours

**Become a Technical Manager in Residential Energy Renovation:** training on the Housing Energy Renovation Plan (HERP). Being able to understand the different elements that impact the energy efficiency of a building, evaluate them and using a technology adapted to the renovation undertaken.* + - Energy operation of a building in the context of HERP
		- Main key technologies, different solutions to improve the energy performance of a building and its interfaces
		- Global approach: understanding and explaining the energy renovation project in a set of renovation issues

**FEEBAT training for the renovation of old buildings :** the specificities of the old building, public policies related to heritage preservation, the technical and regulatory context (21 hours).* + - Analysis of the existing
		- Solutions for structures: low floors, walls, attic, openings, equipment
		- Techniques and materials: compatibility and pathology
		- Proper use of equipment

**Requirement:** to have completed module 1 of FEEBAT «Mastering the fundamentals of your specific job in the field of rehabilitation and restoration of old buildings”*Source* : <https://www.feebat.org/formations/professionnels-du-batiment/>**Regulatory and mandatory training for, among others, site managers and team leaders:*** + - Getting involved in the Committee on Safety Health and Working Conditions (CSHWC) – 9 hours - develop the ability to detect and measure occupational hazards and the ability to analyse working conditions.
		- Difficult Access Response (Rope Professionals) – 7 hours – the safest behaviours and actions, the procedures used if they affect the safety, the operation of the protection and emergency devices and the reasons for their use.
		- Receiving and Maintaining Fixed Scaffolding (R408) – 7 hours
		- Receiving Rolling Scaffolding (R457) – 7 hours

*Source :* <https://www.constructys.fr/> |

| **Topics** | **Key conclusions reached****(analytical part)** |
| --- | --- |
| 1. Potential impact of the national legislative framework, technical & normative, as well as managerial and organisational challenges and barriers on the role and functions of worksite managers and team leaders in building renovation in the partner country concerned.
 | Since 2007, the French legislative framework for the renovation of buildings has mainly focused on global thermal renovation, energy saving (energy transition), as well as waste management on-site. This has its impact on the organization of the worksites, on the priorities to be preferred and on the way in which teams must be made aware of its aspects.Safety on the worksite is also highlighted, whatever it is (new construction and renovation). Vocational training schemes in France provide for a whole range of compulsory training in this field, some of which also concern site managers and team leaders:* Occupational Safety and Health (initiation and maintenance modules
* Working at heights on fixed and rolling scaffolding
* Etc.

In addition, the desk research pointed out that middle managers on renovation sites face priorities such as:* Comprehensive approach on the worksite, including management of the several trades involved
* Management of interculturality on construction sites
* Search for compromises between the new standards (environment, security, organizational modalities, etc.) and the reality of old buildings.
* On-site communication and complex human resource management (companions, relationships with hierarchy and suppliers, etc.)
* Management of unforeseen events on renovation sites
 |
| 1. Recommendations for the training paths to be developed in line with the work situations of site managers and team leaders concerned, as well as with the skills needs identified further to the desk research.
 | The desk research carried out in France shows that the very approach to training for the target audiences must evolve, both with regard to site managers, team leaders and other audiences (in initial and continuing training):* Training paths need to become even more individualized and grounded in work-based learning. Courses not related to work situations are less and less justified, even if theoretical contributions are still necessary.
* For training to become individualized, it is essential to provide, before entering training, positioning modules which will allow to reconcile the objectives of the courses with the knowledge and skills which the candidates already possess. Thus, it is necessary to move from training programs (already existing) to career paths (adapted to the profiles and expectations of the beneficiaries).
* Another strong assumption emerging from the desk research is the recognition (preferably formal) of learning outcomes. It aims, among other things, to gain greater recognition in the company and to advance to the wage level on the scale of qualifications provided for in collective agreements.

Regarding site managers and team leaders for building renovation firms, the areas of training which appear to be the least well covered are:* Comprehensive and systemic approach to buildings to be renovated:
	+ - Building knowledge and diagnosis
		- Multi-crafts on renovation sites (understanding and managing the different trades)
		- Management of unforeseen even on complex worksites (unforeseen internal to the site and unforeseen external, e.g. delivery delays).
* Integration of new environmental standards into the constraints related to renovation projects:
	+ - Energy renovation and conservation (elimination of “thermal strainers”), use of renewable energies on old buildings (e.g. installation of photovoltaic panels)
		- Use of circular economy rules (waste management and recycling, use of recycled materials, etc.)
		- Management of work to improve air quality in old buildings
* Health and safety management on renovation sites:
	+ - Control of installations, materials and equipment to ensure health and safety on the worksite, in accordance with national legislation (fixed and rolling scaffolding, guardrails, use of products that could damage health, compliance with the obligation to wear safety clothing, etc.)
		- Ensures the obligation of mandatory health and safety trainings on site for all
		- Enforce health and safety standards by workers on the renovation site, using the appropriate communication
* Communication on renovation worksites:
	+ - With companions/workers teams
		- With hierarchy
		- With external partners (customers, subcontractors, suppliers, control teams, etc.).
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| **List of References*** Legislative documents on the site: [www.vie-publique.fr](http://www.vie-publique.fr), [www.ademe.fr](http://www.ademe.fr) and [www.ffbatiment.fr](http://www.ffbatiment.fr)
* Training and certification registers: [www.francecompetences.fr](http://www.francecompetences.fr), [www.constructys.fr](http://www.constructys.fr) and <https://www.metiers-btp.fr/entrant-btp/entrant-btp/les-formations-certifiantes/>
* Classified ads available on: [www.pole-emploi.fr](http://www.pole-emploi.fr) and <https://praxion.com/offres/>
* Training offer available at the following sites : <https://www.cesi.fr/>, <http://www.ecole-avignon.com/>, <http://www.iump.fr/>, <https://www.cyu.fr/licence-protection-et-valorisation-du-patrimoine-historique-et-culturel-preservation-et-mise-en-valeur-du-patrimoine-bati-1> and others.
* Energy renovation training modules: <https://www.feebat.org/>
* Descriptions of site manager and site leader duties: [www.batiactu.com](http://www.batiactu.com) and [www.ffbatiment.fr](http://www.ffbatiment.fr)
 |

## Validation of outcomes reached from the Desk Research with group of experts

Experts having participated in the Focus Group organised by Teams (Marek Lawinski)

on 19, 22, 23 and 25 February 2021 (individual 1,5 h interviews with each expert)

|  |  |  |
| --- | --- | --- |
| Name | Organisation | Occupation |
| 1 | SANHAJI Céline (19/02 AM) | Construction Training Centre Bordeaux-Blanquefort | Pedagogical Coordinator |
| 2 | TOUILLON Pierre (22/02 AM) | CCCA-BTP | Pedagogical Advisor |
| 3 | DREYFUS Philippe (22/02 PM) | Construction Training Centre Loire Atlantique | General Manager |
| 4 | DELOURMEL Thomas (23/02 AM) | Regional Council of Occitania | Training Director |
| 5 | DRESTO Philippe | Les Compagnons du Devoir et du Tour de France – national organisation providing training in a variety of manual trades, including construction. | Foresight & Strategic Marketing Director |
| 6 | TAILLEFER Danielle (verification and additional suggestions for the activities of site managers and team leaders) | FFB - French Federation of Employers in the Construction Industry | Training Specialist – Training Department |
| 7 | WEBER Olivier (verification and additional suggestions for the activities of site managers and team leaders) | CAPEB - French Federation of Small & Middle-sized Construction Companies | Training Specialist – Training Department |

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| **Key results of the national Desk Research** | **Opinion/Validation of the findings****Additional ideas and proposals made by the Focus Group Experts** |
| 1. Definition of ‘building renovation sites’ in each national context
 | No comments from the experts, the definition is considered exhaustive and clear. It corresponds to the reality of what we see in France.However, heritage restoration should be well positioned in this landscape, with its specificities and its legislation. |
| 1. National Legislative framework and policies related to Renovation of Buildings.
 | The experts consider this to be a good summary, but there are also new texts on renovation aid that have recently come out. This will have an impact on market share (a market that is growing exponentially, including thanks to State aid that yard managers and foremen will need to be aware of).Legislation in preparation: Bill to combat climate change and strengthen resilience to its effects (including several articles on energy renovation). |
| 1. Definition of the specific role and profile of site managers and team leaders in building renovation projects in each national context (today and in the future).
 | The content of the activities of site managers and team leaders varies according to different company profiles and the territories where these renovation companies are located. Furthermore, if renovation also includes historic buildings, it will be necessary to look at the specificities of the restoration of these buildings (some of which may be very old, dating back several centuries) and the impact of these specificities on the functions of the site foremen and team leaders concerned.In any case, what is most important :* **Situational analysis** skills, to find common sense solutions on renovation sites. This is fundamental for any type of company (in terms of activity and size). This situational analysis capacity must also make it possible to find compromises between new normative requirements and new materials, on the one hand, and the concern to preserve the character of the buildings to be renovated (their aesthetics, external and internal aspects, etc.), on the other.
* Ability to **deal with the unexpected** (constant adaptation, observation and analysis - much more so than in new construction). This is where future foremen and site managers have the hardest time. They must learn how to find the most appropriate solution in an uncertain situation.
* Insist on the precise identification of the specificities of renovation companies and, consequently, of the **specificities of the site managers and company leaders** who work there. Insist on the need to **master the fundamentals of each trade involved in renovation** (much more important than in new construction). For example, to deal with thermal insulation issues, it is necessary to know the basics of the trades represented on the renovation site, to make links between them, to integrate knowledge of new materials and new techniques.
* The boundaries between the activities and tasks of site managers, foremen and site supervisors can be very blurred, especially in small companies, where there are mostly "**global managers**" as a single function.

To gain a better understanding of the roles and functions of the people involved on renovation sites, it is necessary to go further in the analysis of technical tasks and to look at the **relationship between traditional renovation methods and the use of new materials**.Moreover, function and activities are not fixed notions, but evolving. It would therefore be advisable to think about how to observe their evolution, through annual or biannual surveys of companies, for example (model to be designed**): job watch to be set up** so as not to be in a simple photograph, rapidly outdated in a changing world.  |
| 1. Identification of technical challenges and barriers faced for site managers and team leaders related to building renovation sites, including skills needs related to energy saving and circular economy (today and in the future).
 | Challenges to be added :* Organisation of work related to the accessibility of old premises and, more generally, the adaptation of old buildings to ageing audiences (new market to be taken up, in full expansion, given that many buyers of houses/manors/castles are retired people and sensitive to this aspect).
* Ability to **monitor the safety of installations** (scaffolding, electrical installations, etc.) as an element of situational analysis.
* **Health and safety on renovation sites**: also integrate it into the situational analysis, as a challenge, a source of savings and modernity for the company (do not perceive this issue only as a cost generator and a regulatory constraint).
* **Management of the obsolescence of installations and infrastructures** (a factor often forgotten in challenges and training). On the one hand, there is renovation, and on the other hand, new installations age and pollute even more than old ones (e.g. photovoltaic panels that age badly).
* Taking account of **territorial specificities**:
	+ - The challenges can change with the territories, climatic conditions, choices made by local actors, etc. (renovation techniques and methods, as well as the materials used, change from one region to another and site managers / team leaders must master these specificities),
		- Favour short supply circuits for renovation sites (e.g. use local wood, tiles made in the area, etc.) - work on new processes and **new supply circuits** to reduce the carbon impact and transport costs.
* Reconciling traditional technical skills with the need to **use more environmentally friendly materials, while respecting the aesthetics and character of old buildings** (do not distort it under the pretext that technical, safety and environmental standards have changed). In his view, this is a major focus of this study as it is undoubtedly one of the most delicate and yet essential aspects in updating the skills of the site managers.
 |
| 1. Identification of legal and normative challenges and barriers faced for site managers and team leaders related to building renovation sites
 | Take into account additional information from the Construction Quality Agency (<https://qualiteconstruction.com>), which publishes, among other things, "Building pathology sheets" and texts interpreting laws likely to affect the activities of foremen and other site managers (including renovation). A **monitoring tool** to follow developments in the renovation sector.The various energy renovation aid schemes decided by the State will have an impact on the evolution of the markets and the profile of customers whose circles are becoming wider (individuals, institutions, different age groups, etc.). This will have to be considered in the design of training pathways.*Experts' methodological observation*: points 2 and 5 overlap. Therefore, they must be analysed together. |
| 1. Identification of managerial/ organizational challenges and barriers faced for site managers and team leaders related to building renovation sites, including digital skills today and in the future.
 | Some experts point out that the expression "working by rules of the trade" should not be abused as it does not mean much (it is considered too vague).Having mentioned the **RGE Qualifications** is a very important and useful thing, as it opens new markets in renovation.In the personal qualities, to strengthen the "**advisory relationship with customers**", which is specific to the renovation sector, especially the ability to listen and the specificity of advice. This is very important. Understanding the customer: his tastes and needs. Ability to make appropriate proposals.It is also important to **emphasise the relationship** between :* **Well-being at work** (which, being other, helps to avoid dismissals or resignations, conflicts, depression, days of absence, etc.).
* **The quality of work** (well-being as a means of encouraging work well done, avoiding mistakes, thanks to better communication and a peaceful working environment).
* **The preservation of the aesthetics of the buildings to be renovated**, while using new standards and new materials, in relation to the clients' requirements.

In this way, site managers and team leaders, each at his or her own level, contribute to the overall approach to renovation work. |
| 1. Identification of skills needs of site managers and team leaders in building renovation sites related to health and safety rules on worksite (today and in the future).
 | Even if the documentary research did not reveal **companies' expectations in terms of health and safety skills**, there is a need to strengthen this aspect, even if companies do not emphasise it, because they experience safety as a regulatory constraint (an obligation). Indeed, risk prevention is not integrated into the global approach (especially in small companies), nor in the daily life of companies. A clear **distinction must be made between what companies want in terms of skills and what needs to be promoted in addition**, such as safety, so that companies understand the interest of the approach for their competitiveness (e.g. safety: moving from a constraint to an opportunity to increase competitiveness). Need for a new managerial approach in this area, to change the perception of health and safety by small businesses. |
| 1. Existing training provision in relative areas/ State-of-the-art training programmes in building renovation sites.
 | The analysis of existing training courses can be enriched by other schemes, especially initial training, such as :* Training of operational supervisors (at the Bordeaux-Blanquefort training centre) - level 4.
* "Structural work" master's degree (level 4)
* Vocational baccalaureate "Intervention on the Built Heritage" (level 4)
* Master's Degree in Conservation - Restoration of Heritage (level 5)
* Professional Title “Structural work  Team Leader” - Compagnons du Devoir
* Professional Title “Structural work Site Manager Assistant“ - Compagnons du Devoir
* Professional Title “Structural work Site Manager“ - Compagnons du Devoir.

The experts advise to analyse existing training courses that focus on :* individualised learning, mainly in work situations,
* the preliminary positioning modules :
* the modular aspects of the professionalisation pathways (and which enable the student to move away from pre-established training programmes towards individualised and supported professionalisation).
 |
| 1. Potential impact of the national legislative framework, technical & normative, as well as managerial and organisational challenges and barriers on the role and functions of worksite managers and team leaders in building renovation in the partner country concerned.
 | The conclusions are correct, the methodology of the literature review is logical and relevant.The various energy renovation assistance schemes will force the development of a new relationship with customers and subcontractors that site managers (site managers, site supervisors, even team leaders) will have to master.Also add the **"Renovation DTU”** as having a potential impact on the functions of team leader and site manager: <https://www.ffbatiment.fr/federation-francaise-du-batiment/laffb/mediatheque/batimetiers.html?ID_ARTICLE=1934> |
| 1. Recommendations for the training paths to be developed in line with the work situations of site managers and team leaders concerned, as well as with the skills needs identified further to the desk research.
 | The most frequent remarks and proposals :* The training courses must have a deep territorial anchoring because the functions of site foremen and team leaders, approaches to these functions, as well as the materials and renovation methods change from one region (territory) to another. Modular training courses must take this into account (knowledge of the methods and materials used in the given territory).
* Learning by analysing situations experienced at work is most relevant, especially to learn the globality of situations, to learn how to deal with the unexpected on site, and to communicate better within teams and with the hierarchy.
* Don't forget to include training in health and safety at work, considering the specificities (organisational and situational) of renovation sites, as part of a global approach on site. Promote health and safety not only as a regulatory constraint and an additional cost, but as an investment that avoids expenditure following on-site accidents.
* Above all, promote modular and individualised training, with certain modules being adaptable to audiences other than site managers and team leaders (as site supervisors, for example).
* The "Management of Built Heritage" training course is probably not suitable for the target audience, as it has few managerial components. Focus on these managerial aspects and possibly complete the list already provided.
* Reason more in terms of "site managers" (a broad function) than in terms of "site foremen" or "works supervisors", for example, because under the same headings, depending on the profile of the companies, there will be very different activities and tasks.
* Impact of the life cycles of materials on the environment: during their installation, operation and destruction (link with the circular economy).
* Mastering the impact of techniques and materials in the given territory and climate (because a lot of poor workmanship comes from a bad use of materials and renovation techniques in a poorly mastered context). Impact of the life cycle of materials.

Another important subject in the pedagogical engineering work to be undertaken is the question of positioning tools:* How to graduate the level of competence of those entering training, some of whom are beginners and others are experienced professionals, both of whom are aiming for the same professional qualification,
* How to help them question what they are missing can be linked to Job and Competency Planning tools.

In addition, it must be made clear to whom the professionalization measures to be designed will be addressed:* Employees in small companies?
* Employees in large companies?

One of the options, for initial training, would be to create a common core and then differentiate according to the size of the company (to be analysed if this is relevant).In training there are **contents and their level**. Therefore, when defining the contents, it will be necessary to be very precise about the learning outcomes aimed at, in relation to formal levels (3, 4 or 5). This is also valid for the recognition of prior learning through Open Badges.What options in training, where to place cursors between:* Awareness raising,
* The first level of mastery of given issues (e.g. understanding of the budget by team leaders)
* The "passive expert" level (e.g. ability to read and analyse the budget by the site manager)
* The "active expert" level (e.g. ability to design the budget by the works manager).

It would also be interesting to think about how to periodically update the skills of site managers/renovation team leaders, how to master the use of new materials, new installation techniques, etc., while respecting the aesthetic constraints of renovating old buildings and the constraints on the materials used. A monitoring approach, with a distinction between initial and continuing training. In other words: **what monitoring tools are needed to ensure that the training courses designed as part of this project will be relevant in a sustainable way**?The above observations also apply to the design of **training courses for trainers and training engineers:*** Training to position learners in individualised professionalisation pathways (a fundamental component if we want an innovative professionalisation support system and not just a simple training programme).
* Training in the use of work situations for the design of individualised training pathways.
* Training in the design of modular training pathways (modules that can be used in several types of initial and continuing training and aimed at different audiences).
* Training in the evaluation of learning outcomes in the context of individualised training pathways (based on Open Badges).
* Training in pedagogical monitoring, enabling periodic adjustment of professional development paths to the expectations of companies and the varying profiles of learners.
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# **IO1-A2. Identification of the specific skills expected of site managers and team leaders by companies specialising in building renovation.**

## Synthesis of the Field Research findings

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| **Executive Summary**(max 1 page)* Brief presentation of the national field research: target groups involved (number of participants per target group category, occupations, genders, etc.), methods of investigation, description of interviewers, etc.
* Main conclusions regarding the evolution of the functions of site managers and team leaders on renovation sites in your country, about concrete work situations and potential lack of skills and competences.
* Main recommendations for the training paths to be developed (training contents, methods, recognition of learning outcomes).
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| **Key areas of investigation** | **National synthesis and analysis of the answers****collected from interviews** |
| 1. Profile and activities of the companies having participated in the survey.
 |  |
| 1. Essential and sustainable change observed at renovation worksites during the last years.
 |  |
| 1. Specificity of role and profile of site managers and team leaders at renovation worksites observed through work situations (to be listed).
 |  |
| 1. Criteria of professional performance of site managers and team leaders listed by interviewees (when preparing, executing and checking the quality of renovation).
 |  |
| 1. Managerial and organisational challenges/barriers and corresponding skills required from renovation site managers and team leaders, including digital competences today and in the future.

Examples of concrete work situations. |  |
| 1. Identification of technical challenges/barriers and corresponding skills required from renovation site managers and team leaders, including energy saving and circular today and in the future.

Examples of concrete work situations. |  |
| 1. Identification of legal and normative challenges/barriers and corresponding skills required from renovation site managers and team leaders.

Examples of concrete work situations. |  |
| 1. Identification of health and safety challenges/barriers and corresponding skills required from renovation site managers and team leaders, today and in the future.

Examples of concrete work situations. |  |
| 1. Global opinion of the interviewees on the skills and competences of site managers and team leaders, necessary to face current and future challenges within their specific professional contexts.

Identification of the most appropriate learning forms and training paths suggested by the interviewees. |  |
| 1. Identification of the recruitment difficulties and methods practiced currently by the companies interviewed to find appropriate site managers and team leaders for renovation sites.
 |  |
| 1. Identification of the ways in which the companies interviewed cover their training needs addressing site managers and team leaders, in line with current and future evolutions.
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| 1. Identification of the main skills likely to be improved by site managers and team leaders concerned through their further (incl. in-job) training.
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| **Topics** | **Key conclusions reached** |
| 1. Identification of the work situations in which the role and functions of worksite managers and team leaders in building renovation evolve in the most significant way (in the partner country concerned).
 |  |
| 1. Recommendations for the training paths to be developed in line with the work situations of site managers and team leaders concerned, as well as with the skills needs identified: Verification and further development of the hypotheses identified during the desk research.
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| **List of References (if any)** |

## Validation of outcomes reached from the Field Research with group of experts

Experts having participated in the Focus Group organised by ….. at ….. on …..

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| **Key results of the national Field Research** | **Opinion/Validation of the findings****Additional ideas and proposals made by the Focus Group Experts** |
| 1. Profile and activities of the companies having participated in the survey.
 | Only for information |
| 1. Essential and sustainable change observed at renovation worksites during the last years.
 |  |
| 1. Specificity of role and profile of site managers and team leaders at renovation worksites observed through work situations (to be listed).
 |  |
| 1. Criteria of professional performance of site managers and team leaders listed by interviewees (when preparing, executing and checking the quality of renovation).
 |  |
| 1. Managerial and organisational challenges/barriers and corresponding skills required from renovation site managers and team leaders, including digital competences today and in the future.

Examples of concrete work situations. |  |
| 1. Identification of technical challenges/barriers and corresponding skills required from renovation site managers and team leaders, including energy saving and circular today and in the future.

Examples of concrete work situations. |  |
| 1. Identification of legal and normative challenges/barriers and corresponding skills required from renovation site managers and team leaders.

Examples of concrete work situations. |  |
| 1. Identification of health and safety challenges/barriers and corresponding skills required from renovation site managers and team leaders, today and in the future.

Examples of concrete work situations. |  |
| 1. Global opinion of the interviewees on the skills and competences of site managers and team leaders, necessary to face current and future challenges within their specific professional contexts.

Identification of the most appropriate learning forms and training paths suggested by the interviewees. |  |
| 1. Identification of the recruitment difficulties and methods practiced currently by the companies interviewed to find appropriate site managers and team leaders for renovation sites.
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| 1. Identification of the ways in which the companies interviewed cover their training needs addressing site managers and team leaders, in line with current and future evolutions.
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| 1. Identification of the main skills likely to be improved by site managers and team leaders concerned through their further (incl. in-job) training.
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| 1. Identification of the work situations in which the role and functions of worksite managers and team leaders in building renovation evolve in the most significant way (in the partner country concerned).
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| 1. Recommendations for the training paths to be developed in line with the work situations of site managers and team leaders concerned, as well as with the skills needs identified: Verification and further development of the hypotheses identified during the desk research.
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1. In its post-Covid recovery plan presented on August 25th, 2020, the French government intends to spend at least €20 billion on the ecological transition with a part for the thermal renovation of buildings. So far, this project, which is good for both employment and the environment, is having a hard time getting started. The 2015 Climate Energy Act called for 500,000 renovations per year, but “there are barely 25,000 energy-efficient building (BBC) renovations,” according to the newspaper “La Croix ». <https://www.la-croix.com/Economie/Renovation-thermique-grand-chantier-relance-2020-08-21-1201110084> [↑](#footnote-ref-1)
2. The BEST (Building Energy Savings Training) program supports the development of skills of professionals in the Building sector (initial and continuing training). https://www.feebat.org/ [↑](#footnote-ref-2)
3. National Directory of Professional Certifications [↑](#footnote-ref-3)
4. Professional Training Centre [↑](#footnote-ref-4)
5. High Environment Quality [↑](#footnote-ref-5)
6. Low Energy Building [↑](#footnote-ref-6)
7. Building Energy Savings Training [↑](#footnote-ref-7)