

**Professionnalisation des chefs de chantiers et chefs d’équipe dans le management des chantiers de rénovation en Europe**

Contrat N° 2020-1-FR01-KA202-080105 (2020-2023)



**IO1-A1. Analyse approfondie des spécificités techniques, organisationnelles et normatives de la rénovation des bâtiments sur sites qui impactent l’évolution des fonctions de chefs de chantiers et chefs d’équipes dans le pays partenaires.**

**Étude documentaire :**

**résultats pour l’avis des experts**

**en ITALIA**



Rome, 08 March 2021

Contenu

[**1.** **L’essentiel du projet** 3](#_Toc64393248)

[**2.** **IO1-A1. Analyse approfondie des spécificités techniques, organisationnelles et normatives des sites de rénovation de bâtiments qui impactent l’évolution des fonctions de chefs de chantiers et chefs d’équipe sur ces sites : synthèse de l’étude documentaire** 5](#_Toc64393249)

[1. Définition de « chantiers de rénovation de bâtiments » en France. 6](#_Toc64393250)

[2. Cadre législatif français et politique liée à la rénovation de bâtiments. 7](#_Toc64393251)

[3. Définition des rôles et profils spécifiques des chefs de chantier et chefs d’équipe dans les projets de rénovation de bâtiments (actuels et futurs) en France. 10](#_Toc64393252)

[4. Identification des défis techniques et des obstacles auxquels sont confrontés les chefs de chantiers et les chefs d’équipe sur les chantiers de rénovation, y compris les besoins en compétences liés aux économies d’énergie et à l’économie circulaire (actuels et futurs). 12](#_Toc64393253)

[5. Identification des défis et des obstacles juridiques et normatifs auxquels sont confrontés les chefs de chantier et les chefs d’équipe sur les sites de rénovation de bâtiments. 13](#_Toc64393254)

[6. Identification des défis et des obstacles en matière de gestion et d’organisation auxquels sont confrontés les chefs de chantiers et les chefs d’équipe sur les sites de rénovation de bâtiments, y compris les compétences numériques actuelles et futures. 14](#_Toc64393255)

[7. Identification des besoins en compétences des chefs de chantier et des chefs d’équipe sur les chantiers de rénovation, liées aux règles de santé et de sécurité sur ces sites (actuelles et futures). 14](#_Toc64393256)

[8. Offre de formation existante dans les domaines précités / programmes de formation de pointe dédiés aux chantiers de rénovation de bâtiments. 15](#_Toc64393257)

[9. Impact potentiel du cadre législatif actuel, des défis et obstacles techniques et normatifs, ainsi que des défis et obstacles managériaux et organisationnels sur le rôle et les fonctions des chefs de chantier et des chefs d'équipe dans la rénovation des bâtiments dans le pays partenaire concerné. 21](#_Toc64393258)

[10. Recommandations pour les parcours de formation à développer en fonction des situations de travail des chefs de chantier et des chefs d'équipe concernés, ainsi que des besoins en compétences identifiés à la suite de la recherche documentaire. 21](#_Toc64393259)

[**3.** **Les étapes suivantes du projet en 2021** 23](#_Toc64393260)

# **IO1-A1. Analyse approfondie des spécificités techniques, organisationnelles et normatives des sites de rénovation de bâtiments qui impactent l’évolution des fonctions de chefs de chantiers et chefs d’équipe sur ces sites : synthèse de l’étude documentaire**

|  |
| --- |
| Synthesis  The study carried out by Formedil was based on a number of meetings with experts from the sector and from the building schools that are members of the system and on an analysis of other training projects including MicsxCapo, ConstructyVet, WatterSkills and CDWaste. In addition, articles and websites from the sector were viewed, as well as publications made in recent years by ANCE (National Association of Building Contractors), CNA (National Confederation of Craftsmen and Small and Medium Enterprises) and CRESME (Centre for Economic, Sociological and Market Research in Construction).  The data from this research was formally examined in depth through a specific Focus Group envisaged by the project and held online (Zoom platform) on 8 March 2021. This focus group revealed the need to train additional site managers and team leaders, since in Italy these two figures are disappearing and only those who have been trained in the last 10 years remain. This situation is due to the lack of interest of young people in the youth sector and the historical moment in which construction companies find themselves: - most enterprises are micro and therefore the employer is the main figure who also plays these roles;  - Compulsory training in terms of health and safety at work has taken over from vocational training.  - short training is preferred to longer training that takes place in the evenings and after working hours.  During the discussion it also emerged that the new skills that future site managers and team leaders will need to have are those related to environmental issues (characteristics and installation of new green materials, waste management and circular economy), and digitalisation for a smart site (BIM). However, training must also evolve and be conceived in a different way: the classic theoretical training carried out in the classroom must be supplemented by on-the-job training (WBL) where participants can gain experience on a real construction site.  Other topics to be explored during the training should be those related to:  - communication  - management of time and its deviations  - cost analysis |

|  | **Documentary search results**  **(descriptive part)** |
| --- | --- |
| 1. Definition of "building renovation sites" in Italy | In Italy, the term building renovation is generally used to indicate the set of building works intended to renovate, modify or repair a building structure.  In the Italian legislative context, depending on the type of intervention that one intends to carry out, there are precise indications and procedures to be respected, which differ according to the ultimate aim of the intervention itself.  In terms of urban planning, construction, function and structure, there are substantial differences between *renovation and restoration work*, which should be carefully considered before starting any work.  Article 3 of the Consolidation Act DPR 380/01 distinguishes building interventions in five categories:   * routine maintenance; * extraordinary maintenance; * new construction; * restoration and renovation; * building renovation;   A brief description of the first three categories is given below:  **Ordinary maintenance work**  This concerns repair, renovation and replacement of building finishes and works necessary to integrate or maintain existing technological installations.  Examples are works such as re-roofing using the same materials or the floor, renovating the bathroom, painting the facade, replacing a window, installing an independent heating system. This category also includes work to remove architectural barriers.  **Extraordinary maintenance work**  This concerns the works and modifications necessary to renovate and replace parts of the buildings, including structural parts, as well as to create and integrate sanitary and technological services, provided that they do not alter the overall volume of the buildings and do not entail changes in the intended use.  Examples include the construction of sanitary or technological facilities, the installation of heating plants or lifts, the construction and demolition of non-load-bearing internal walls and the opening of windows.  **New construction**  They concern the building and urban transformation of the territory and do not fall within the categories defined in the previous points.  **Renovation and restoration**  Passiamo ora ad analizzare con maggior dettaglio le categorie relative alla ristrutturazione e al restauro degli edifici, poiché spesso le loro caratteristiche risultano poco chiare.  La differenza tra le due categorie risiede nella sostanza, ovvero entrambe si riferiscono all'organismo edilizio ma mentre l'intervento di restauro è finalizzato a non snaturare e non innovare le caratteristiche fisiche complessive dell'organismo edilizio, la ristrutturazione edilizia, è di per se indirizzata alla trasformazione totale o parziale dell'organismo stesso.  The Testo unico delle disposizioni legislative e regolamentari in materia edilizia defines the renovation of a building structure as the set of interventions aimed at transforming a building both in its nature and in its essential characteristics.  This type of renovation work involves the radical and complete transformation of the components of the entire building, with a change in typological qualification, an increase in the number of building units and the alteration of the original typological-distribution system and architectural features.  The demolition and reconstruction of the structure is also considered as renovation, but only when the parameters of the new building remain the same as those of the previous structure in volumetric terms.  In contrast to renovation, restoration is a term that is used more for the renovation of buildings that have historical-artistic value and/or are under cultural heritage protection and can be used to make major changes to the structure of the building in question, but without altering its volume. |
| 2. Italian legislative framework and policy on building renovation. | The interventions to restore the building heritage, as mentioned above, i.e. extraordinary maintenance, restoration and building renovation, benefit from important tax breaks, both with respect to individual housing units and to the common parts of condominiums.  The best known of these benefits is the one that grants a 36% deduction from IRPEF of the expenses incurred, up to a total amount of no more than 48,000 euros per property unit.  The 36% share has been raised to 50% and the total amount of eligible expenditure up to €96,000 for those expenses made in the period between 26 June 2012 and 30 June 2013,  These surcharges have been extended several times by subsequent measures, up to the 2018 Budget Law which postponed until 31 December 2018 the possibility of taking advantage of the higher IRPEF deduction of 50% and the maximum expenditure limit of €96,000 for each property unit.  If there is no new extension, from 1 January 2019 the tax deduction will return to the ordinary 36% and with a limit of EUR 48,000.  In addition, as of 2018, the obligation to transmit information on the work carried out to ENEA has come into force, similarly to what is already envisaged for the energy requalification of buildings, in order to monitor and assess the energy savings achieved with the implementation of building renovation work.  The technical and procedural requirements to be observed are set out in the Interministerial Decree of 06 August 2020, which came into force on 6 October 2020. For interventions with a start date prior to 6 October 2020, Decree 19/02/2007 and subsequent amendments and Decree 11 March 2008 as amended by Decree 26 January 2010 apply.  The general rule is that the main technical and economic characteristics must be certified by a qualified technician. However, in the simplest and most common cases, the affidavit can be replaced by substitute documentation issued by the supplier, e.g. the certificate issued by the manufacturer of the windows and doors indicating the transmittance value of each of them, which must be lower than the limit value, and also containing an indication of the transmittance value of the replaced windows and doors, or in the case of a condensation generator, the manufacturer's certificate showing the average seasonal efficiency in heating mode, which must be higher than the minimum value required by the regulations (ηs ≥ 90%).  At European level, in order to promote energy efficiency in the building sector and to achieve the objectives set, the Commission has planned to take action through the "Renovation Wave" initiative and through a significant revision of the energy efficiency directives by the first half of 2021.  The "Renovation Wave" initiative was created with the primary objective of optimising the renovation of buildings throughout the European Union, including by promoting investment and financing.  This initiative will be a real "wave of renovations" of public and private buildings that will significantly reduce energy consumption, reduce waste and stimulate the economy especially by supporting Small and Medium Enterprises (SMEs).  In order to accelerate energy efficiency investments in this sector, the European Commission has intensified its efforts in recent years, with specific calls to strengthen the existing financial framework, increase funding levels, diversify the types of financial models and explore new mechanisms of support. In Europe, various private and public financial and fiscal mechanisms are currently available for the energy refurbishment of buildings in the form of non-repayable rewards, debt financing, equity financing, etc. The European Commission is currently working on the implementation of these mechanisms.  A 2019 JRC (**Joint Research Centre**) study "Accelerating energy renovation investments in buildings. Financial and fiscal instruments across the EU", analyses the main incentive measures dedicated to buildings in the Member States and investigates new private financial products currently in place to stimulate more investments in energy efficiency in residential, commercial and public buildings.    **\* Ecobonus - The relaunch decree - 110% deductions (Law Decree 34/2020 as converted by Law 77 of 17 July 2020 - S.O. to G.U. no. 180 of 18 July 2020)**  In order to boost the economy, following the Covid-19 pandemic, which saw a sharp downturn in the economy due also to a long lockdown period and consequently the temporary closure of many construction sites, the Government decided to use the tax deduction mechanism, applied to energy efficiency and anti-seismic interventions, raising the deduction rate to 110% of the expenditure incurred and, at the same time, halving the number of annual instalments over which the deduction is spread, from ten to five.  In the same logic as the Ecobonus, interventions on the envelope and on the systems are eligible for the 110% deduction and are classified as leading and trailing interventions.  **Leading interventions**   1. **Enclosure**   Interventions on the shell can be carried out on condominiums, single-family buildings and on building units located inside multi-family buildings that are functionally independent and have one or more independent accesses from the outside. The intervention is limited to the insulation of only the opaque structures enclosing the heated volume and must affect more than 25% of the total gross dispersing surface of the building. This intervention is therefore, according to the decree 26/06/2015, at least a 2nd level major renovation.   1. **Installations**   The work on the systems concerns the replacement of the existing winter air conditioning system.  **Towed interventions**  Paragraph 2 of Article 119 of the Relaunch Decree provides that the 110% deduction percentage also applies to all other energy efficiency measures referred to in Article 14 of Decree-Law No. 63 of 4 June 2013, i.e. the Ecobonus, within the spending limits provided for, for each energy efficiency measure, by the legislation in force and provided that they are carried out in conjunction with at least one of the driving measures.  The eligibility of energy efficiency measures is conditioned by the requirement that "as a whole, they must ensure the improvement of at least two energy classes of the building or of the building units located in multi-family buildings which are functionally independent and have one or more independent accesses from the outside, or, if this is not possible, the achievement of the highest energy class, to be demonstrated by means of the energy performance certificate (A. P.E.), referred to in Article 6 of Legislative Decree no. 192 of 19 August 2005, before and after the intervention, issued by a qualified technician in the form of an affidavit".P.E.), referred to in Article 6 of Legislative Decree No 192 of 19 August 2005, before and after the intervention, issued by a qualified technician in the form of a sworn statement".  The requirements for Ecobonus must also be met, i.e. the provisions of the Interministerial Decree of 6 August 2020 must be observed. For interventions with a start date prior to 6 October 2020, the requirements of the decree 19/02/2007 and subsequent amendments and the decree 11 March 2008 as amended by the decree 26/01/2010 can be applied. This new decree also contains an important innovation, already provided for in the 2018 Budget Law, regarding the maximum unit eligible costs specific to each intervention.  In order to encourage the promotion of the "Ecobonus" initiative, Formedil has promoted targeted training actions on energy efficiency, seismic improvement, the correct installation of insulating panels, window frames and photovoltaic panels to retrain and improve the skills of workers, as well as to support the construction companies involved in the work indicated in the "Bando Nazionale 110".  The Formedil initiative involved workers and technicians from the construction sector distributed over 3 training actions carried out by the local authorities belonging to the system. |

|  |  |
| --- | --- |
| 3. Definition of the specific roles and profiles of site managers and team leaders in (current and future) building renovation projects in Italy. | In Italy, given the historical moment, it is very difficult to make the distinction between the figure of the site manager and the team leader as most companies are composed of 2/3 workers including the employer. Sometimes the two roles coincide with the same person who is often the owner of the company. In the most structured companies where these two figures are present, we can define  **Site Manager**The site manager can be a specialised worker or a site technician. whose main responsibility is to coordinate the workers on a construction site. He/she is a professional figure who is in charge of planning, organising, directing and controlling everything on the construction site, assessing projects from when they start to when they are completed, respecting all deadlines and safety regulations.  **Team Leader**: is a worker who, due to specific professional competences, supervises the work activity and ensures the implementation of the directives received, checking their correct execution by the workers and exercising a functional power of initiative. He/she gives orders during the work, assigns tasks to the staff and is the one who ensures the correct and safe execution of the whole work.  The following are the skills and abilities that the site manager and team leader should have  **skills and capabilities of the site manager**   * Ability to coordinate activities and tasks. * Knowledge of labour law and the collective labour agreement and that applied by the company. * Knowing how to allocate tasks according to workers' competences * Knowing how to manage and maximise human and instrumental resources * Knowing how to analyse costs * Knowing how to choose the most suitable machines and equipment * Knowing how to properly manage construction site schedules and deviations from the timetable. * Communication and interpersonal skills * Knowledge of occupational safety legislation and its enforcement * Knowledge of site waste management (recycling, reuse and landfill) * Technical knowledge for quality control of staff work * Transversal knowledge about new green materials, their use and application * knowledge of the use of new technological and digital tools * Managing emergency situations   **Leader skills and abilities of the team leader**   * Knowledge of occupational health and safety regulations and their application * Relational skills between the procedures to be implemented and the human resources available. * Knowledge of how to monitor work carried out * Ability to prevent problems * Problem solving skills * Transversal knowledge about new green materials, their use and application * Kowledge of the use of new technological and digital tools * Managing emergency situations |

|  |  |
| --- | --- |
| 4. Identification of technical challenges and barriers faced by site and team leaders on renovation sites, including skills needs related to energy saving and the circular economy(current and future). | The obstacles they face are that most of the time they are not aware of their role.  One reason for this may be that in Italy there are many micro enterprises where the employer is often on the construction site and therefore his figure diminishes that of the more competent worker.  Another reason may be that often the worker who is the most senior or closest to the employer is appointed as site manager or team leader and not the one with more specific skills and who directs and manages the work on site.  The challenges facing these figures is therefore to make their skills known to others and to stand out from other workers. |
| 5. Identification of the legal and regulatory challenges and obstacles faced by site and team leaders on building renovation sites. | The regulatory hurdles that site managers and team leaders have to face are due to the new legislation on the so-called Ecobonus 110 which provides a tax deduction for both internal energy efficiency and seismic improvements.  According to Art. 7 of the Decree Law N.48/20, "Only certified installers may carry out the installation of building elements and technical building systems".  This means that installers and construction workers must be certified for ecobonus interventions. Only certified installers will be allowed to carry out the installation of building elements and technical building systems if customers want to access the ecobonus tax benefit.  By decree of the President of the Republic, pursuant to Article 17, paragraph 1, of Law no. 400 of 23 August 1988, on the proposal of the Minister of Economic Development, having obtained the agreement of the Permanent Conference - June 2020 DLgs 192/2005 - text coordinated with amendments of DLgs 48/2020 (entered into force 11 June 2020) for the relations between the State, the regions and the autonomous provinces of Trento and Bolzano, the granting of the incentives is affirmed on condition that the aforementioned systems are installed by a certified operator in possession of the necessary requirements including the level of professional training, also through specialised courses and various certifications.  Once the decree of the President of the Republic has come into force, after 180 days, incentives such as the Ecobonus will only be granted if installers have obtained the appropriate certification. While waiting for the decree to be published, if, for example, a private individual wishes to access the 2020 home renovation bonus, he should already turn to competent and certified professionals whose work guarantees access to these tax benefits.  **Adequate competence is therefore a specific requirement for professionals** who install components or lay materials that have a direct influence on the **energy efficiency** of the building.  This category includes, for example, the following **professionals**, for some of whom **there is already a specific qualification standard** allowing certification:   * Installers of thermal insulation systems (UNI 11716) * Window and door fitters (UNI 11673-2) * Solar thermal panel installers * Heat pump installers * Installers of condensing boilers (UNI 11554)   This opens up an **opportunity for operators in the sector to both raise the professional level of installers** and to guarantee the real performance of the equipment or material used to improve the energy efficiency of buildings.  In addition, according to the **UNI 11716** standard, the following requirements must be met for access to installer certification  **basic level**   * knowledge of the Italian language * 4 years' professional experience   **site manager level**   * Having passed the basic level * Working experience of at least 1 year as a team leader. |

|  |  |
| --- | --- |
| 6. Identification of management and organisational challenges and obstacles faced by site and team leaders on building renovation sites, including current and future digital skills. | The new contributions granted by the Italian State on energy renovation and seismic upgrading have opened up new working scenarios, creating new opportunities for work, development and growth not only for companies but also for workers. In fact, all workers, technicians, employers, consultants, site managers and team leaders will have to acquire specific technical and management skills in order to be able to carry out the works correctly, as required by the Law Decree.  The skills that site managers and team leaders will need to acquire in the management and organisation of work on renovation and energy efficiency sites are :   * Knowing how to allocate tasks according to workers' competences * Knowing how to manage and maximise human and instrumental resources * Knowing how to analyse costs * Knowing how to choose the most suitable machines and equipment * Knowing how to appropriately manage construction site schedules and deviations from the timetable * Communication and interpersonal skills * Good interpersonal skills and ability to manage conflicts (both with peers and with the hierarchy), related to adaptability and open-mindedness. |
| 7. Identification of the skills needs of site managers and foremen on renovation sites, with reference to health and safety standards on these sites(current and future). | In Italy, the training for DLgs. 81/08 concerning the health and safety of workers is very much in demand; in fact, more training hours are dedicated to safety than to professional training. We can therefore say that most site managers and team leaders have more need for vocational training than for health and safety training.  Nevertheless, the new launch of the Ecobonus introduced new materials and therefore new processes that brought new risks linked to new technologies and new materials used. Therefore, these two figures need professionalisation courses in order to acquire new skills for managing the new risks arising from:   * installation of insulating panels on roofs and building facades * use of new equipment to carry out surveys and to lay the new materials * use of new energy efficiency equipment * new types of maintenance of the renovated building in accordance with the requirements of Decree-Law No. 48/20 * interventions for the seismic improvement of buildings |
| **8.** Existing training offer in the above fields / advanced training programmes dedicated to building renovation sites. | (1) Title of the training course: MICSxCAPO  Duration: 18 months (80 hours)  Type: continuous training (you must be a site manager or team leader) Level: 4  Designer : Formedil (territorial building schools belonging to the system)  Objectives: to improve the technical, managerial and relational skills of site managers, taking into account health and safety regulations in Italy  Contents :  - Traditional techniques and methodologies of intervention in heritage environments (rehabilitation, restoration or conservation).  - Organisation and management of teams.  - Communication.  - the management of Health and Safety at work.  - BIM  The course includes 16 initial hours in the classroom. Training interventions on specific topics are foreseen for 2/3 hours. The trainer carries out training interventions at the worksite and, together with the worker involved, analyses the work he/she is carrying out at that moment. After having carried out training interventions on all the worksites where the various workers are involved, they all meet in the classroom to discuss any problems that have arisen and analyse the risk situations that have occurred during the work.  (2) Title of the training course: Ecobonus  Duration: 3 months (48/ 60 hours)  Type: continuous training  Level: 3/4/5  Designer : Formedil (territorial building schools participating in the system) and CNCPT Objectives: to improve technical skills regarding green skills related to energy efficiency and seismic upgrading and skills regarding health and safety regulations for workers  Contents :  - New green materials  - Correct installation of insulation panels  - Correct installation of windows and doors  - Seismic improvement works  - occupational health and safety management related to new materials, use of new equipment and new processes.  The course is modular and involves workers, site managers, team leaders and site technicians. The duration varies according to the module chosen |

|  | **Principales conclusions issues des points précédents**  **(partie analytique)** |
| --- | --- |
| 9. Potential impact of the current legislative framework, technical and regulatory challenges and obstacles, as well as managerial and organisational obstacles on the role and functions of site and team leaders in building renovation in the partner country in question. | For some years now, and especially since July 2020 with the introduction of the ecobonus 110, the Italian legislative framework for building renovation has focused heavily on global thermal renovation, seismic improvement, energy saving and the renovation of building facades. This has an impact on the organisation of construction sites, the work to be carried out and the skills and responsibilities of workers, site managers and team leaders.  Consequently, the legislation on health and safety in the workplace also needs to be reviewed in the light of new technologies, new materials and new materials used. This is affecting the training offer of the building schools, in fact they are gearing up to resume vocational training especially for the correct laying of coats in order to improve the skills of all workers. With this in mind, the skills of team leaders and site managers have also been revised, especially with regard to green and digitalisation. |
| 10. Recommendations for training paths to be developed according to the work situations of the team leaders and team leaders concerned, as well as the skills needs identified as a result of the literature search. | The study carried out in Italy, also by means of the Focus group, highlights the need to renew the training offer by creating ad hoc courses where hours of practical training and on-the-job training are favoured.  For this reason, the training on offer should provide for more individualised training paths that are better anchored in work experience ("work-based learning"). It should provide for recognition of learning outcomes in order to achieve better recognition in the enterprise, to advance workers, site managers and team leaders and to improve European mobility. |
|  |  |

|  |
| --- |
| **Références :**   * *Source :* [https:/formedil.it](https://www.constructys.fr/) – ww.cna.it - <http://www.cresme.it/> - https://www.ance.it/ |