

OASIS

WP2 - Development of Learning Resources on Green Infrastructures

Focus Groups Report

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I. Introduction

The OASIS project is designed to support the development of green competences and skills among VET students and professionals working in the construction sector, with a particular focus on green infrastructure. One of the main aims of the project is to align vocational education with the real and evolving needs of the labor market. In addition to fostering technical knowledge, the project also seeks to enhance mentoring skills among company trainers and to support sustainability awareness and action during work-based learning. By strengthening the connection between vocational education providers and industry, the OASIS project ensures that its learning resources are grounded in reality and are informed by innovative trends in sustainable construction. The approach taken by the project not only responds to the current demands of the sector but also contributes meaningfully to the broader objective of advancing green transition across Europe.

Within this strategic framework, WP2 plays a central role. It brings together industry experts and vocational education providers to ensure the relevance and practical value of the learning resources that will be developed throughout the project. A key activity within WP2 is the organization of focus groups in each participating country, which aim to gather insights, feedback, and examples directly from professionals who are actively engaged in the field of sustainable construction and green infrastructure. These discussions form the foundation for the development of training materials, including audiovisual content and real-life case studies of buildings that successfully integrate green infrastructure solutions.

II. Implementation Overview

Each of the four countries participating in this phase of the project, Bulgaria, Greece, France, and Italy, organized a national focus group. In total, over 40 experts participated in these events. The format of the meetings varied slightly across countries, with some partners opting for face-to-face sessions while others conducted the discussions online or in a hybrid format. Despite the differences in organization, all focus groups followed the same structure and addressed a consistent set of questions to ensure comparability and thematic alignment.

The participants represented a rich mix of profiles, including engineers, architects, renewable energy consultants, VET trainers, researchers, municipal officials, and representatives from construction companies of various sizes. All participants were carefully selected based on their experience and expertise in green infrastructure solutions, particularly in plumbing, heating and cooling systems, and thermohydraulics. This diversity ensured a holistic and practice-oriented perspective on the challenges, opportunities, and future directions of sustainable construction in Europe.

III. Summary of Main Findings

During the discussions, experts shared insights into the types of projects and innovations they had worked on. Across the four countries, participants described a broad range of initiatives, from energy-efficient public and residential buildings to industrial retrofits and solar-powered infrastructure. Many had hands-on experience with smart HVAC systems, integrated renewable energy solutions such as photovoltaic and solar thermal panels, green roofs, and rainwater harvesting. A particularly noteworthy example that received attention was the Park Lane Office Center in Bulgaria, which features an

advanced facade system, energy-efficient lighting, and a building management system, and has achieved LEED Platinum certification.

While enthusiasm for green solutions was evident, participants also identified several challenges that persist in the construction sector. Most notably, the high upfront cost of sustainable technologies remains a significant barrier, particularly for small and medium-sized enterprises and clients unfamiliar with the long-term financial benefits of green investments. In addition, experts pointed out that there is a shortage of qualified workers capable of implementing these systems, and that vocational training often lags behind current market needs. Complex and inconsistent regulations, along with limited state incentives, were also frequently mentioned as obstacles to the wider adoption of green practices.

In terms of best practices, participants were able to suggest several buildings and projects that serve as strong examples of innovative green infrastructure. These included public schools renovated to passive house standards, sports complexes powered by solar energy, and social housing units equipped with smart environmental monitoring systems. Participants emphasized the importance of using such case studies in the OASIS project's training resources, not only to showcase technical solutions but also to present measurable outcomes such as energy savings, user satisfaction, and environmental impact.

One of the recurring recommendations across all focus groups was the inclusion of additional contextual elements in the case studies and learning materials. Participants expressed the need for training content that goes beyond technical specifications to also cover maintenance, cost calculations, user behavior, and system longevity. They also suggested that the project features a diverse set of examples, including smaller-scale and rural projects, to ensure wider relevance and accessibility.

With regard to emerging technologies, the focus groups identified several trends that should be reflected in the training resources. These include AI-driven building management systems, smart meters and sensors, modular energy units, phase-change materials, digital twins for predictive maintenance, and eco-friendly construction materials such as hempcrete. Participants highlighted the rapid pace of technological innovation and the need for VET institutions to stay up to date with these changes in order to equip learners with future-ready skills.

Another key topic discussed was the alignment of vocational education with the needs of the labor market. Experts agreed that closer collaboration between training centers and industry is essential. They advocated for the co-design of training modules, the introduction of short certification programs, and the use of hands-on learning opportunities that expose students to real construction environments. Study visits, apprenticeships, and guest lectures by professionals were also considered effective ways to bridge this gap.

When asked about the most important skills for VET students and professionals, participants highlighted technical competence in green systems, such as the installation and maintenance of photovoltaic panels, operation of smart HVAC and thermohydraulic systems, and integration of low consumption plumbing technologies. Digital skills were also considered essential, particularly those related to the use of building management systems (BMS), smart meters, sensors, and diagnostic software for real-time energy monitoring and optimization. In addition, the ability to interpret environmental performance data, apply lifecycle thinking, and perform basic cost-benefit analysis was seen as increasingly important. Critical thinking, adaptability, and problem-solving were emphasized as core transversal skills, along with the capacity to collaborate effectively in interdisciplinary teams that may include engineers, architects, site managers, and IT specialists. Participants also stressed the importance of fostering a sustainability mindset and instilling a commitment to continuous learning, as

the sector is evolving rapidly with the emergence of technologies such as AI-assisted energy modeling, digital twins, and circular building materials.

To ensure the practicality of the training resources developed as part of the OASIS project, experts suggested that the materials should be modular, visual, and grounded in real-world scenarios. Ideally, the content should be mobile-friendly, available in multiple languages, and include visual guides, short videos, and interviews with professionals working in the field. Flexibility and usability were seen as key factors in making the resources effective for a wide range of learners, including those already employed in the construction sector.

IV. Conclusion

The national focus groups held in Bulgaria, Greece, France, and Italy provided a rich and diverse collection of insights that are of critical importance for the development of the OASIS project's training materials. They confirmed the need for vocational education to evolve in response to environmental and technological challenges, and they demonstrated the value of engaging professionals from different backgrounds to inform this process.

Through this activity, the project not only achieved its goal of engaging key stakeholders at an early stage but also laid a solid foundation for the next phases of WP2. The contributions of the experts will directly influence the selection of case studies and the design of learning resources that are technically accurate, pedagogically sound, and aligned with labor market expectations.

The results of these discussions clearly indicate that there is a shared commitment across Europe to move toward greener and more resilient construction practices. By capturing and integrating these expert perspectives, the OASIS project is well-positioned to contribute meaningfully to this transition, while equipping the next generation of construction professionals with the skills and mindsets needed for a sustainable future.