



Future STEAM Cities

Investment Plan for



PŁOCK STEAM INNOVATION HUB

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Płock faces a growing challenge shared by many medium-sized cities: retaining young talent, preparing residents for a rapidly changing labour market, and ensuring that education keeps pace with technological and economic transformation.

Despite a strong industrial base, local employers report increasing shortages of technical and digital skills, while many young people leave the city to study and work elsewhere. At the same time, schools need greater capacity, modern learning environments, and stronger links with employers and higher education institutions to prepare students for future careers.

The Płock STEAM Innovation HUB Investment Plan responds to these challenges by creating a city-wide ecosystem that connects education, innovation, culture, business, and community partners. Building on the successful Aveiro TECH City model and adapted to Płock's local context, the initiative will establish STEAM Labs in schools, deliver City BootCamps, and organise annual STEAM Festivals to inspire learners and strengthen collaboration across sectors.

The value proposition is simple: **by investing in future-focused skills, modern learning environments, and stronger partnerships between education and industry, Płock can develop local talent, improve employability, support innovation, and make the city a more attractive place to live and work.**

Over the next decade, the project aims to equip young people and adults with the skills needed for the knowledge economy, strengthen the local innovation ecosystem, and contribute to sustainable economic growth while reducing youth outmigration.

This is not only an education project—it is a long-term investment in Płock's competitiveness, resilience, and future prosperity.

SECTION 1: The policy context

1.1 Needs analysis in the territorial context

The City of Płock, as a medium-sized urban center with strong industrial roots and growing educational potential, faces a set of interconnected socio-economic and educational challenges that define its current territorial development needs. These needs arise from demographic trends, labour market transformations, structural limitations in the education system, and barriers to cooperation between key local stakeholders. Addressing them is crucial for strengthening the city's competitiveness, social cohesion, and long-term resilience.

In the context of the Future STEAM Cities project, the development needs of Płock can be understood as part of a broader transition toward a more knowledge-based, innovation-driven urban model. **Strengthening human capital and retaining talent** is not only about preventing the outflow of young people to larger centres such as Warsaw, but about creating a coherent environment in which education, employment, and quality of life are aligned. Within the project, this translates into **building clear connections between STEAM education and local career opportunities**. By embedding real-world applications, mentorship, and career guidance into the learning process, the project helps young people perceive Płock as a place where long-term professional development is both possible and attractive.

At the same time, the need for a more agile and responsive education system is addressed through a shift toward interdisciplinary, project-based learning that reflects real socio-economic challenges. The Future STEAM Cities approach **encourages schools to move beyond traditional subject silos** and adopt teaching methods that combine science, technology, engineering, arts, and mathematics in practical contexts. This makes education more relevant to the local economy while also fostering creativity, critical thinking, and problem-solving skills. The project serves as a testing ground for innovative pedagogies that can later be scaled across the entire local education system, ensuring that it remains adaptable to future labour market transformations.

The importance of **lifelong learning** is also central in this framework, as the project extends the concept of STEAM beyond formal schooling into a city-wide learning ecosystem. In practice, this means creating **flexible opportunities for adults to acquire new competencies**, change career paths, or update their skills in response to technological and economic shifts. By involving employers and local institutions, the project supports continuous upskilling and promotes a culture in which learning is seen as an ongoing process rather than a one-time phase of life. This is particularly important in a city with a strong industrial base, where workforce transformation will be a key factor in maintaining competitiveness.

Equally important is the development of a cohesive local innovation ecosystem, which project actively facilitates by fostering structured **cooperation between education providers, businesses, public institutions, and the wider community**. Instead of isolated initiatives, the project promotes long-term partnerships, co-creation of educational content, and joint problem-solving activities such as hackathons or innovation challenges. This collaborative model

strengthens knowledge transfer and ensures that educational outcomes are closely aligned with real economic needs, while also stimulating entrepreneurship and local innovation capacity.

Another critical dimension is the need for **sustained investment in educational infrastructure and human resources**. Within the project, this involves not only equipping schools with modern laboratories and digital tools, but also ensuring that teachers are adequately prepared and supported to deliver STEAM-based education.

Finally, the **strengthening of digital and social competencies** is treated as a core outcome of the entire process. Through participation in interdisciplinary projects and real-life problem-solving activities, learners develop not only technical skills but also the ability to collaborate, communicate, and adapt to change. These competencies are essential for employability in a rapidly evolving labour market, but also for active participation in community life and local development processes. In this way, the project supports the emergence of a more resilient, engaged, and future-ready society in Płock.

1.2 The policy response

There're direct links between the aforementioned challenges and our main policy instrument – City's 2030 Sustainable Development Strategy – which sets City's main development goals and key directions, takes precedence over other municipal documents of a lower level. The document shows the list of objectives and tasks to be fulfilled, in order to make it a city of a community caring for a healthy and active lifestyle involved in sports; an innovative city with technologically advanced economy; and a city of attractive and aesthetic and harmonious space, comfortable for the lives of residents. The document has been developed with the participation of young city residents, so that they have impact on the important aspects of the city development.

Płock is also the regional leader and brings together 20 surrounding municipalities for an integrated approach to cohesion policy. The partnership adopted the Supra-local development strategy for the "Functional Area of the City of Płock". Some of the operational goals include education system adapted to the needs and standards of modern times, qualitative strengthening of demographic potential of the area, improving the availability and quality of health and social services.

To ensure that the City's development is dynamic and sustainable and the challenges are faced, certain actions should be undertaken:

1. Płock should implement a coordinated **Talent Retention Strategy** offering internships, graduate pipelines, attractive housing options, and vibrant cultural programming to keep young specialists in the city. In line with the development priorities of Płock and its declining and ageing population trends, a coordinated Talent Retention Strategy is necessary to counter youth outmigration by linking

career opportunities, housing availability, and quality of life improvements highlighted in the city's sustainable development strategy.

2. The city must strengthen **cooperation between universities and employers** by co-creating curricula, forecasting skills needs, and expanding practical training such as internships and applied research projects. Considering demographic shrinkage and the need to better align education with the local labour market, strengthening cooperation between universities and employers supports the city's strategic goal of building a competitive, knowledge-based economy rooted in local industry.
3. A **Lifelong Learning System** should be developed with flexible, modular courses and retraining pathways supported by vouchers and blended learning hubs. In response to an ageing workforce and evolving economic structure, developing a Lifelong Learning System reflects the city's strategic emphasis on adaptability and social inclusion by enabling continuous upskilling and professional mobility.
4. Schools need **investment in STEAM** education through interdisciplinary lesson plans, mobile labs, and access to modern equipment. Investment in STEAM education in schools directly supports the strategic objective of improving education quality while addressing demographic challenges by making local education more attractive and relevant to future-oriented sectors.
5. Teachers require high-quality professional development, mentoring, and innovation grants to increase motivation and support modern pedagogy. **Enhancing teacher competencies** and motivation aligns with the city's long-term goal of strengthening human capital, particularly important in the context of declining student numbers and the need to maintain high education standards.
6. A formal **Skills & Innovation Alliance** should be established to coordinate business-education partnerships and create a unified local innovation ecosystem. Establishing a formal Skills & Innovation Alliance responds to both demographic and economic pressures by fostering coordinated action among stakeholders, as envisaged in the city's strategy for building an integrated local innovation ecosystem.
7. Programs to **build digital literacy and social competencies** should be integrated across schools, adult education, and community initiatives. Integrating digital literacy and social competencies across education levels supports the city's sustainable development priorities by preparing residents of all ages for active participation in a modern economy and mitigating the social impacts of demographic change.

The solution resulting from the actions described above is **Plock STEAM Innovation HUB** that creates a continuous pathway from education to employment. Tech Labs build early interest and competencies in science, technology, engineering, arts and mathematics among primary school students. Bootcamps provide advanced digital, technical and employability skills for older students and young adults, directly linked to labour market needs. STEAM Fest

acts as the public-facing platform that celebrates achievement, connects schools, employers, universities and families, and promotes a culture of innovation across the city.

If sustained over ten years, these actions will deliver more than individual projects. They will create a permanent STEAM ecosystem in Płock, characterised by stronger collaboration between schools, higher education institutions, employers and cultural organisations; better alignment between education and workforce needs; increased access to modern learning environments; and clearer pathways for young people to develop careers locally. Structurally, Płock will move from a fragmented system of education and skills development to an integrated talent pipeline that supports innovation, strengthens the local economy, and improves the city's ability to attract and retain skilled residents. This wording explicitly answers the question many funders and evaluators ask: *"What will be different in the city after ten years?"* The answer is not simply more activities, but the creation of a permanent local talent and innovation ecosystem.

SECTION 2: The investment proposal

2.1 Background to the proposal

The URBACT Innovative Transfer Networks process has highlighted the importance of long-term strategic planning. The Future Steam Cities project was a journey, that allowed to learn how to adapt Aveiro's successful practices to Płock's context over the next decade.

The "Płock STEAM Innovation HUB" project which is the continuation of the "Future STEAM Cities", aligns with the Płock **2035+ Sustainable Development Strategy** in a coherent and multidimensional manner, addressing the city's key development goals in the areas of education, innovation, and strengthening main city actors collaboration.

The project directly supports the development of future-oriented competencies among young Płock residents. One of the Strategy's key directions is strengthening human capital by improving the quality of education and adapting it to the challenges of the modern economy. Actions tested as part of the project develop digital, analytical, and problem-solving skills, which aligns with the need to prepare students for a knowledge-based economy.

Fostering innovation and modern teaching methods is also a key element of the Strategy. The "Future STEAM Cities" project utilizes the STEAM approach, which integrates various fields of knowledge and promotes experiential learning. This form of education develops creativity, critical thinking, and teamwork skills, which is consistent with the direction of education system transformation outlined in the Strategy.

Conducting a survey among teachers, parents and local business representatives led to the conclusion, that the city needs to implement changes in order to start the process of building collaboration between significant areas as well as beginning the transformation of the education model toward a STEAM approach, so that the education system is better adapted to the challenges of the modern labor market.

Teachers demonstrate a strong openness to implementing innovative teaching methods and a willingness to work within an interdisciplinary model. At the same time, they emphasize the need for continued training and substantive support, particularly in the practical implementation of the STEAM approach. They also emphasize the need to prioritize soft skills and artistic elements in the educational process.

Parents, although not always familiar with STEAM terminology, largely support the idea of education based on the integration of various disciplines and hands-on learning. They emphasize that the current education system is not focused enough on the development of practical and social skills. They also express interest in modern forms of teaching, such as workshops and extracurricular activities, and express a desire for greater involvement in their children's educational process.

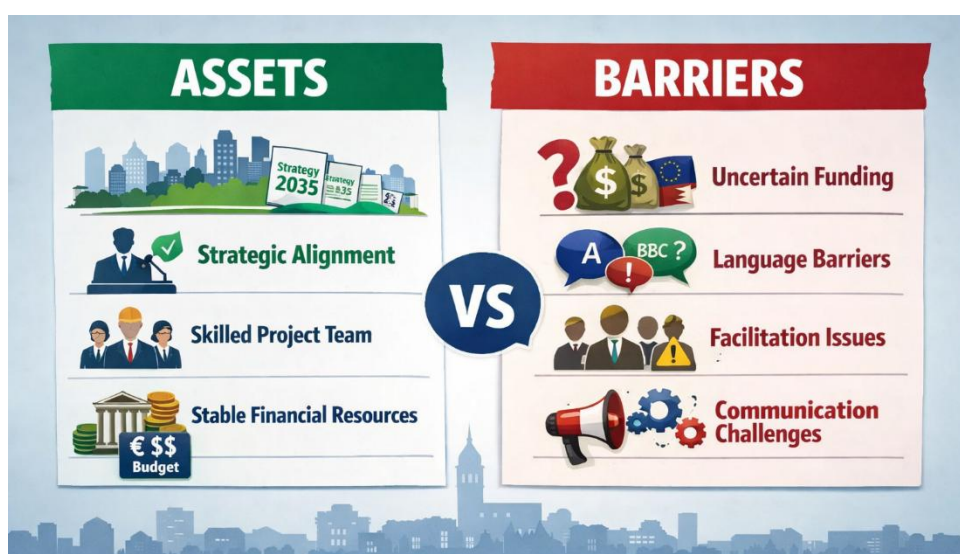
Employers, in turn, point to the growing skills gap in the labor market, encompassing both technical and social skills. They point out that difficulties in recruiting employees limit company growth. At the same time, they declare their openness to cooperation with the education sector, including participation in the development of educational programs and support in preparing young people for professional careers.

The conclusions drawn from the surveys summary together with good practice experience of Aveiro City, brought us to believing that the Future STEAM Cities project is a great opportunity to jointly face challenges using solutions introduced by our Leader. These solutions focus on the development of entrepreneurship as well as the collaboration between local business environment and academia - key areas ensuring the stable development of the city and its residents.

2.2 Our starting point

Despite of the decreasing unemployment rate, Płock faces the challenge of keeping young graduates in the city to start and build their careers. Similarly to the city of Aveiro, great number of students move to larger cities to look for employment and never comes back to Płock. This is a very serious issue, as the local companies cannot find employees – especially in the fields of engineering, science and construction work.

Another issue commonly brought up by the representatives of the local education environment is the lack of interest in STEM subjects among students. The Warsaw University of Technology based in Płock is getting less students applications every year, even though there would be job opportunities for graduates. Dynamically changing technological market shows new opportunities to existing companies, but may cause problems and confusion among their employees, who find it difficult to understand. The lack of knowledge about the innovative tools used nowadays, leads to unnecessary conflicts between the employers and employees. It is also difficult to keep strong position on the job market- without the basic digital skills.



At the very beginning of the project we defined key **assets** and **barriers** that may influence the implementation of the project, highlighting both internal strengths and potential risks.

Source: AI-assisted visualization

As far as the **assets** are concerned, the project showed a strong alignment with strategic frameworks at multiple levels. It is well embedded within the city's long-term development vision, particularly through its consistency with the City's Sustainable Development Strategy 2035+ and the Supra-Local Development Strategy for the Functional Area of the City of Płock. This strategic fit provides a solid foundation for project implementation and increases the likelihood of institutional continuity and policy support.

Another important strength is the high level of political support, which creates favorable conditions for decision-making, resource allocation, and overall project legitimacy. Strong leadership engagement is a critical enabling factor, especially for initiatives requiring cross-departmental cooperation.

In terms of organizational capacity, the availability of human resources is also a significant asset. The involvement of the Project Team, City Hall departments, and Urban Local Group (ULG) members ensures access to diverse expertise and supports collaborative implementation. Additionally, the city's stable financial situation—supported by state budget funds, local taxes, and other revenues—provides a relatively secure basis for sustaining project activities.

On the other hand, some potential barriers have been defined, that may affect the process. One of the key uncertainties relates to external support mechanisms, particularly at the regional and national levels. The availability of funding streams, including those linked to EU funds or support from institutions such as the Ministry of Education, remains to be assessed during the project. This introduces a degree of unpredictability in long-term financing opportunities.

Operational challenges are also evident. Language barriers may hinder effective communication, while an ineffective or inadequate facilitation of the ULG could limit the group's productivity, reduce stakeholder involvement, and ultimately impact the quality of project outcomes.

The Project implementation in Płock is built on strong institutional, strategic, and financial foundations. At the same time, its success will depend on effectively managing identified risks, particularly those related to stakeholder engagement, communication, and external funding alignment.

2.3 The adapted version of the innovative practice

During the Adapt Phase of the Future STEAM Cities project, Płock tested selected elements of the Aveiro TECH City model in cooperation with members of the Urbact Local Group (ULG). The choice of pilot actions was informed by three sources: the city's needs analysis, stakeholder consultations with teachers, parents and employers, and the experience of Aveiro as the Lead Partner. Rather than replicating the original model, Płock adapted the practices to address its own territorial challenges, particularly youth outmigration, declining interest in STEM

subjects, skills shortages reported by employers, and the limited collaboration between schools, higher education institutions and the business sector.

The STEAM Conference for teachers was selected because consultations revealed strong interest among educators in innovative teaching methods, but also a lack of practical experience in implementing STEAM approaches. Inspired by Aveiro's TECH-LABS model, the conference was adapted to focus on peer learning, practical classroom applications and local examples. Hosting the event in a school already experimenting with STEAM methods helped demonstrate that innovation can be achieved within the realities of Płock's education system and encouraged teachers to become active agents of change.

The STEAM Classes in primary schools were chosen to address the declining interest in science and technology subjects observed by schools and higher education institutions. Rather than introducing a completely new curriculum, the activity was adapted as an extracurricular program targeting pupils aged 11–13, allowing schools to experiment with interdisciplinary learning without major structural changes. This approach provided students with early exposure to project-based learning while enabling teachers to test new methodologies and identify equipment and training needs before wider implementation.

The Technology University Workshops were developed in response to the weak connection between school education and local career opportunities. Employers and the local technical university highlighted the need to make technical professions more visible and attractive to young people. The workshops therefore adapted Aveiro's model by directly linking school learning with practical experiences in university laboratories. Activities were aligned with the primary school curriculum, enabling students to apply classroom knowledge in real-world settings and strengthening awareness of educational pathways available within Płock.

The Museum Workshops represent a specific adaptation to Płock's local cultural assets. While the original Aveiro practice emphasised technology and innovation, Płock sought to strengthen the "A" (Arts) component of STEAM by involving the Mazovian Museum. This adaptation reflects feedback from teachers and parents who stressed the importance of creativity and soft skills development. By combining science, technology and cultural heritage, the workshops demonstrate that innovation can emerge from the interaction of technical and creative disciplines while also strengthening local identity.

Finally, the Agile/Scrum Training for vocational school students was introduced in response to labour market feedback. Local employers identified a growing need for workplace competencies such as teamwork, project management, adaptability and problem-solving. At the same time, the emergence of automation and artificial intelligence is changing the profile of entry-level digital jobs. Adapting Aveiro's CITY BOOTCAMP model, Płock focused on Agile and Scrum methodologies as practical tools that increase employability and prepare students for contemporary

work environments. This pilot also served as a precursor to the larger bootcamp program proposed in the investment plan.

Together, these pilot actions demonstrated that the core principles of the Aveiro model—hands-on learning, strong partnerships, and links between education and innovation—can be successfully adapted to Płock’s context. The testing phase confirmed that local stakeholders are willing to engage in a more collaborative and interdisciplinary approach to education and provided evidence for scaling these practices through the long-term investment program.

Name of the Testing Action	Adapted Aveiro’s Practice	Description	Result
STEAM Conference for primary schools teachers	TECH-LABS	Conference held in primary school, which has an experience in STEAM approach.	Teachers from our local schools gained new knowledge, contacts and perspective. Participation also helped in building the belief and motivation to implement the innovative teaching techniques.
STEAM classes	TECH-LABS	Additional (after school) STEAM classes for 5 and 6- graders in 3 local primary schools	Students were introduced to interdisciplinary learning, built innovative capacities and strengthened soft skills. Teachers practiced the new approach and creatively designed lesson plans, including needed equipment, which was funded from the project budget.
Tech University Workshops	TECH-LABS	Workshops for 5 and 6-graders at local Tech University	Workshops were strictly aligned with the primary school curriculum, so that students after learning the theory at school, could also use their knowledge in a practical way.
Museum Workshops	TECH-LABS	Workshops for 5 and 6-graders in the Mazovian Museum	Workshops showed the connection between the art and science; and added cultural aspect of our local historic legacy.

Agile/Scrum training	CITY BOOTCAMP	Workshops on agile methodologies (Agile/Scrum) addressed to students of a programming technical school	Building Agile/Scrum-related competencies as a key element in increasing the employability of young programmers, especially in the context of the decreasing number of junior job offers and the growing role of automation and AI tools
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2.4 The integrated approach and the participative process

The project will employ a multi-stakeholder approach, involving primary schools, universities, training/innovation center, cultural institutions and local government to ensure comprehensive and sustainable implementation over the next decade.

Płock is at the very beginning of its STEAM journey, so that the integrated approach has been essential for designing solutions that respond not only to educational needs, but also to local labour market dynamics, cultural resources, and community expectations. This approach has allowed the city to design headline actions—such as TechLabs, Museum & Tech University Workshops, and the IT Bootcamp—not in isolation, but as mutually connected interventions that reinforce learning pathways from early education to employment

The URBACT principle of multi-stakeholder participation is deeply embedded in Płock's process through the active role of its Urbact Local Group (ULG). The ULG, composed of teachers, school leaders, cultural institutions, the Tech University, the Teachers Training Centre, municipal departments, and business representatives, has co-designed every stage of the adapted practices, using shared insights, joint problem analysis, and inspiration from the Lead Partner Aveiro. This collaborative structure ensures that the solutions developed are relevant for teachers, attractive to students, and strongly connected to the needs of local employers

Participation is not limited to planning but continues through monitoring and evaluation, where ULG members actively contribute their expertise to assess progress and co-design improvements. This continuous dialogue—between academia, industry, culture, and local government—ensures that the actions developed are responsive, realistic, and sustainable over the next decade. In this way, Płock's approach fully reflects the URBACT model: cross-sectoral, participatory, iterative, and grounded in local strengths while addressing key territorial challenges such as teacher motivation, equipment gaps, and youth outmigration.

In this context, the Future STEAM Cities initiative becomes a key operational bridge between strategic vision and practical implementation in Płock. Its objectives are closely aligned with the assumptions of the City's Sustainable Development Strategy 2035+, particularly in strengthening human capital, fostering innovation, and enhancing the city's long-term competitiveness. At the same time, the project directly supports the goals of the national education reform "Kompas Jutra," by promoting interdisciplinary learning, developing digital and future-oriented skills, and reinforcing the role of schools as hubs of local development. By integrating these strategic frameworks, Płock is not only piloting innovative STEAM solutions, but also embedding them within a broader policy ecosystem—ensuring that educational transformation contributes to sustainable urban growth and responds effectively to future social and economic challenges.

A further dimension of the integrated approach concerns the territorial dynamics of talent attraction and retention. Płock operates within a wider functional urban area comprising 20 surrounding municipalities and is influenced by the strong pull of larger metropolitan centres, particularly Warsaw and Łódź. Young people often leave the city and the wider region to pursue higher education and employment opportunities elsewhere, while employers across the functional area report increasing difficulties in recruiting workers with technical and digital skills. As a result, the challenge addressed by the project is not only educational but also territorial in nature.

The project therefore adopts a functional-area perspective. While many activities will be coordinated by the City of Płock, the benefits are intended to extend across the wider territory. Schools, cultural institutions, employers and training providers from neighbouring municipalities will be encouraged to participate in selected activities, particularly STEAM Fest events, teacher development initiatives and skills-related partnerships. This approach recognises that labour markets, commuting patterns and educational pathways extend beyond administrative boundaries.

At the same time, the project acknowledges that talent mobility is a natural feature of modern economies and that not all young people can or should be expected to remain in Płock. The objective is therefore not to prevent mobility but to strengthen the attractiveness and competitiveness of the local and regional ecosystem. By creating stronger links between schools, universities and employers, increasing visibility of local career opportunities, and building a distinctive innovation-oriented identity for the functional area, the project seeks to increase the proportion of young people who choose to study, work, return to, or establish businesses within Płock and its surrounding municipalities.

Over the long term, the program aims to contribute to a more integrated territorial innovation ecosystem in which educational institutions, employers, public authorities and community organisations collaborate across municipal boundaries.

This will help ensure that investments in skills development generate benefits for the entire functional area, strengthen regional resilience, and reduce the negative impacts of demographic decline and talent leakage to larger metropolitan centres. In this sense, Future STEAM Cities is not only a city development initiative but also a strategic investment in the human capital and competitiveness of the wider Płock functional area.

SECTION 3: The adapted innovation project

3.1 The Value Proposition

Płock STEAM Innovation HUB initiative aims **to transform the way education, skills development and innovation are connected across Płock and its wider functional area**. The project responds to three interrelated challenges: the outflow of young talent to larger urban centres, growing skills shortages reported by local employers, and the need for education systems to adapt to rapid technological and economic change.

The core value proposition is the creation of a city-wide STEAM ecosystem that connects schools, universities, employers, cultural institutions and public authorities around a shared objective: preparing young people and adults with the competencies needed for the future economy while strengthening opportunities for them to develop their careers locally.

The proposed actions are designed as mutually reinforcing interventions. Tech Labs provide schools with the environment, equipment and teacher support needed to introduce interdisciplinary and project-based learning. Bootcamps strengthen advanced digital, technical and employability skills while creating stronger links between learners and local employers. STEAM Fest serves as a platform for community engagement, knowledge exchange and the promotion of innovation culture across the city and surrounding municipalities.

However, the ultimate goal of the program extends beyond the delivery of these individual activities. The long-term ambition is to embed STEAM methodologies into mainstream education across Płock so that interdisciplinary, problem-based and real-world learning becomes a standard feature of everyday teaching in all subjects and at all levels. By 2035, STEAM should no longer exist as a separate program or a set of additional lessons, but as an integral approach to learning that is routinely applied across the curriculum, from science and technology to humanities, arts and social sciences.

Through this transformation, Płock will move from a fragmented system of education and skills development to an integrated talent pipeline that supports innovation, strengthens collaboration between education and industry, improves workforce readiness, and enhances the city's ability to attract, retain and develop talent. The result will be a more resilient, innovative and competitive city, supported by a culture of lifelong learning and strong partnerships across the wider functional area.

3.2 The workplan

The **Płock STEAM Innovation HUB** workplan is designed as a long-term transformation program that combines educational innovation, skills development and community engagement. Over the period 2026–2035, the project will progressively build the foundations for embedding STEAM methodologies across the local education system. The three headline actions—Tech Labs, Bootcamps and STEAM Fest—operate at different stages of the talent development pathway and reinforce one another. Tech Labs create the capacity for schools to adopt interdisciplinary and project-based learning, Bootcamps provide advanced skills and stronger connections to employment opportunities, while STEAM Fest promotes innovation culture and broad stakeholder engagement across the city and wider functional area. Together, these actions will support the transition from pilot activities to a sustainable city-wide ecosystem in which STEAM approaches become an integral part of mainstream education and lifelong learning.

1. Establishment of Tech Labs

- **Objective:** Create a space in schools to provide hands-on experience with modern technology and foster interest in STEM fields.
- **Actions:**
 - Identify and partner with 15 schools across Płock for Tech Lab implementation.
 - Depending on the capacity and room availability – creating STEAM Classrooms or procuring necessary equipment and technology, including computers, 3D printers, robotics kits, creative materials, education games etc.
 - Develop a curriculum that integrates tech lab activities with existing educational programs.
 - Involve collaboration between primary schools and Tech University + Museum
 - Train teachers and staff to effectively utilize tech labs in their teaching.
- **Timeline:** 2026-2035
- **Indicators:** Number of tech labs established, student participation rates, and feedback from educators and students.
- **Potential risks:**

Description	Risk-mitigation measures
Low motivation of students to participate in tech labs	Gradually trying to incorporate STEAM in the curriculum, so that students don't have to attend additional classes
Low motivation of teachers to practice STEAM	Focus on mentoring and mutual learning, as well as try to propose some forms of financial motivation, if possible

Not enough funding	Adopting funding strategy, engaging EU Funds Department to look for external sources and apply for them
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2. Organization of Bootcamps

- **Objective:** Conduct intensive bootcamps to equip vocational schools and universities graduates with in-demand digital skills and prepare them for the job market.
- **Actions:**
 - Develop partnerships with local tech companies and educational institutions to design bootcamp content.
 - Organize bi-annual bootcamps focusing on areas such as coding, data analysis, and digital marketing.
 - Provide mentorship and career guidance to participants.
- **Timeline:** 2026-2035
- **Indicators:** Number of bootcamps conducted, participant completion rates, and employment outcomes for participants.
- Potential risks:

Description	Risk-mitigation measures
Lack of interest from local businesses	Looking for potential interest, by narrowing down relevant activity profiles and cooperating with the Municipal Employment Office
Not enough funding	Adopting funding strategy, engaging EU Funds Department to look for external sources and apply for them
Lack of interest from students	Looking for „bootcamp agents“ in schools, teachers willing to cooperate, based on already built-up interest during the pilot

3. Organization of STEAM Fest

- **Objective:** Engage the primary schools and whole community and showcase the opportunities available through the Future Steam Cities project.
- **Actions:**
 - Plan and execute annual STEAM Fest at participating schools and tech labs.
 - Organize workshops, demonstrations, and networking events to highlight project achievements.
 - Involve local media and influencers to increase visibility and community engagement.
- **Timeline:** Annually from 2026-2035
- **Indicators:** Attendance numbers, media coverage, and community feedback.

- Potential risks:

Description	Risk-mitigation measures
Lack of interest from the schools	Start from the 3 schools already involved in STEAM and invite other schools to see what they offer, then gradually engage them, to lower pressure and build confidence. Depending on available budget, ready-to-use STEAM booth kits and short teacher trainings could help reduce workload.
Not enough funding	We'll set up a long-term cooperation with local actors, especially MSCDN and design the festival as a low-cost, scalable event using existing school spaces, volunteers, and reusable materials.

Timeframes and Phasing

- **Phase 1 (2026-2028):** Initial setup, including partnerships, planning, and pilot implementations.
- **Phase 2 (2029-2034):** Expansion and scaling of successful initiatives, with ongoing monitoring and adjustments.
- **Phase 3 (2034-2035):** Evaluation, adaptation, and preparation for long-term sustainability beyond 2035.

3.3 Governance and delivery model

The Plock STEAM Innovation HUB program will be delivered as a coordinated, city-wide transformation initiative comprising three interconnected actions:

1. **Tech Labs** – building the infrastructure, teaching capacity and learning methodologies required to embed STEAM approaches within mainstream education.
2. **Bootcamps** – providing advanced digital, technical and employability skills while strengthening connections between learners, employers and higher education institutions.
3. **STEAM Fest** – creating visibility, community engagement and cross-sector collaboration while promoting a culture of innovation across Plock and its wider functional area.

Project	Objectives	Key Actions	Timeline	Main Partners	Indicators
1. Establishment of Tech Labs	• Provide hands-on experience with modern technology • Foster interest in STEM and innovation among students	• Select 15 schools in Plock • Procure equipment (computers, 3D printers, robotics kits) • Develop integrated tech-lab curriculum • Train teachers and staff	2026–2035	• City of Plock (lead) • 15 Participating Schools • Local tech companies • Universities & training institutions	• Number of tech labs established • Student participation • Teacher training numbers • User satisfaction feedback
2. Organization of Bootcamps	• Equip young people with in-demand digital skills • Support employment readiness and career development	• Co-design bootcamp content with industry partners • Deliver bi-annual bootcamps (coding, data, digital marketing, etc.) • Provide mentorship & career guidance	2026–2035 (2 per year)	• City of Plock • Tech companies & start-ups • Higher education partners • Community youth organisations	• Number of bootcamps conducted • Completion rates • Employment outcomes • Participant satisfaction
3. Organization of STEAM Fest	• Engage the community in STEAM culture • Showcase achievements of Future STEAM Cities initiative	• Plan and deliver annual STEAM Fest • Provide workshops, demonstrations, networking • Collaborate with media & influencers for outreach	Annually 2026–2035	• City of Plock • Participating schools & tech labs • Media partners • Community organisations	• Attendance numbers • Media coverage and social reach • Community feedback • Number of activities delivered

Together, these actions form a single program designed to create a continuous pathway from education to employment and lifelong learning. While each action has distinct objectives and delivery partners, they will be managed through a common governance framework to ensure strategic alignment, efficient resource allocation and shared learning.

Strategic leadership of the program will be provided by the City of Płock through the relevant municipal departments responsible for education, development and external funding. The program will be embedded within the implementation framework of the City's Sustainable Development Strategy 2035+, ensuring that decisions, investments and monitoring activities contribute directly to the city's long-term development priorities.

The Urbact Local Group (ULG), established during the Future STEAM Cities network, will evolve from a project consultation body into a permanent STEAM Partnership Forum. The Forum will bring together representatives of schools, the Warsaw University of Technology branch in Płock, teacher training institutions, cultural organisations, employers, business support organisations, neighbouring municipalities and relevant municipal departments. Its role will be to provide strategic advice, identify emerging skills needs, support stakeholder engagement, review program performance and co-design future improvements.

Operational delivery will be coordinated by a Płock STEAM Innovation HUB Team within the City of Płock. The team will oversee implementation, funding applications, monitoring, communications and coordination between partners. Delivery responsibilities for individual actions will be shared among participating schools, higher education institutions, employers and cultural organisations, creating a distributed implementation model while maintaining clear accountability through the City.

The governance model is designed to align with existing municipal decision-making structures rather than creating a parallel system. Program progress and major investment decisions will be reported through established city governance processes, enabling political oversight and ensuring integration with wider education, economic development and territorial development policies. This approach will also facilitate coordination with the Functional Area of the City of Płock, allowing neighbouring municipalities and regional stakeholders to participate in selected activities and contribute to the development of a broader territorial innovation ecosystem.

Through this governance structure, the program will combine strong strategic leadership from the City, active participation from local stakeholders, and long-term institutional ownership, increasing the likelihood that STEAM methodologies become embedded within the mainstream education system beyond the lifetime of the project.

3.4 Overall project schedule

The project will be phased over 10 years, with initial setup in the first two years, program implementation and scaling in the subsequent years, and evaluation and adaptation in the final years

SECTION 4: Budget

4.1 Project costs

TECH LABS estimation - CAPEX

Type of costs	Amount	Notes
Equipment for 15 Primary Schools	€140,000	Cost of purchasing low- and high-tech tools, such as robotics kits, electronic equipment, 3D printers, furniture etc.
Infrastructure Upgrades – STEAM class rooms (10 schools)	€170,000	Enlarging storage spaces or classrooms to accommodate new equipment and activities
Mobile STEAM Workstations	€50,000	Development and deployment of mobile workstations to facilitate hands-on learning experiences
Equipment maintenance and upgrading	€10,000	Software and programs upgrading and technical support

TECH LABS estimation - OPEX

Type of costs	Amount	Notes
Additional/Motivational Salaries for Teachers	€100,000	Cost of purchasing low- and high-tech tools, such as robotics kits, electronic equipment, 3D printers, etc
Hiring new staff	?	IT specialists, new teachers
Costs of Mentoring Institutions	€52,000	Mentoring on site in the classroom and at group meetings; individual feedback
Costs of cooperation with local partners	€50,000	Procured costs of workshops done by local partners, such as a tech university or a museum

Total Estimated Costs (2026-2035) – € 572,000

BOOTCAMPS

Capital Expenditures (CapEx)

Type of costs	Amount	Notes
Training Facilities Setup	€12,000	Establishing or upgrading facilities to host bootcamp sessions, including necessary technology and infrastructure.
Equipment and Software	€80,000	Purchasing computers, software licenses, and other necessary equipment for participants.

Operational Expenditures (OpEx)

Type of costs	Amount	Notes
Instructor Salaries	€150,000	Compensation for instructors and trainers conducting the bootcamps
Curriculum Development and Updates	€20,000	Costs associated with developing and updating the bootcamp curriculum to stay aligned with industry needs.
Participant Support	€30,000	Providing materials, resources, and potential stipends for participants
Marketing and Outreach	€16,000	Promoting the bootcamps to attract participants and engage local businesses.

Total Estimated Costs (2026-2035)

- **Total CapEx:** €92,000
- **Total OpEx (over 9 years):** €216,000

STEAM FESTIVAL

Operational Expenditures (OpEx)

Type of costs	Amount	Notes
Venue Rental	€50,000	Providing adapted space for the festival; Tech Equipment, sound system, furniture
Powerspeech speaker	€15,000	Salary of the speaker

Small Equipment	€20,000	Prizes for participants, Prizes for schools/teachers, Stationery, branded gifts
Marketing and Outreach	€20,000	Promoting the bootcamps to attract participants and engage local businesses.

Total Estimated Costs (2026-2035) – €105,000

4.2 Investment sources

As an important first step towards implementation, the City of Płock submitted an application under the European Urban Initiative – Innovative Actions (EUI-IA) program. The proposal builds directly on the experience and partnerships developed through the URBACT Future STEAM Cities network and represents a key opportunity to secure initial investment for the scaling of STEAM-related activities. Regardless of the outcome of the EUI-IA application, the City remains committed to the long-term implementation of the Investment Plan and will pursue a diversified funding strategy throughout the program period.

The funding approach will combine municipal resources, European programs, national funding schemes, private-sector contributions and institutional partnerships. Different funding sources will be targeted according to the nature of the activities being supported. Capital investments such as Tech Labs, equipment procurement and classroom adaptations will primarily be aligned with ERDF, EUI and national infrastructure funding opportunities. Skills development activities, teacher training, bootcamps and mentoring programs will be linked to ESF+, Erasmus+, and national education funding instruments. Community engagement activities such as STEAM Fest will seek support from municipal budgets, sponsorship arrangements, corporate social responsibility programs and cultural funding streams. Where appropriate, Horizon Europe and innovation-related programs will also be explored to support pilot projects, experimentation and cross-sector partnerships.

Responsibility for funding identification and coordination will be led by the City of Płock, with a central role played by the Municipal EU Funds Department. Working closely with Investment Support and the Education Department, project partners and members of the STEAM Partnership Forum, this team will monitor emerging funding opportunities, coordinate lobbying and partnership-building activities, and lead the preparation of funding applications.

This proactive funding model will reduce dependence on any single source of financing and increase the program's long-term sustainability. By matching

funding sources to specific activities and maintaining continuous investment development efforts throughout the implementation period, Płock will be better positioned to secure the resources needed to embed STEAM methodologies across the local education system and sustain the program beyond 2035.

Potential funding sources:

Activity	Lead Funding Sources			Lead Organisation
 Tech Labs Establishing and equipping STEAM Labs in schools and upgrading classrooms.	 European Regional Development Fund (ERDF)	 EUROPEAN URBAN INITIATIVE (EUI)	 PŁOCK	 City of Płock + Schools
 Teacher Training Training teachers and building capacity to integrate STEAM methodologies.	 European Social Fund Plus (ESF+)	 Erasmus+ Enriching lives, opening minds.	 MINISTERSTWO EDUKACJI NARODOWEJ	 Education Department + Training Centre
 Bootcamps Delivering digital and technical skills bootcamps and connecting learners with employers.	 European Social Fund Plus (ESF+)	 Employers & Industry Partners	 CORPORATE SOCIAL RESPONSIBILITY	 City of Płock + Employers + University
 STEAM Fest Organising the annual STEAM festival and community engagement activities.	 PŁOCK	 Sponsors & Partners	 CORPORATE SOCIAL RESPONSIBILITY	 City of Płock + Partners
 Innovation Pilots Supporting innovation pilots, experimentation and cross-sector collaboration.	 Horizon Europe	 EUROPEAN URBAN INITIATIVE (EUI)	 Employers & Industry Partners	 City of Płock + University + Employers

Source: AI-assisted visualization

SECTION 5: Monitoring and Evaluation

5.1 The Monitoring and evaluation approach

The monitoring of the **Plock STEAM Innovation HUB** initiatives will be carried out through a structured, continuous process coordinated by the project's central management team. Each partner will have the visible impact in the process of evaluation- the roles will be assigned on the basis of performed activities

Monitoring activities will include:

1. Routine Data Collection

Each project Partner, who is responsible for conducting activities will report quarterly on key operational indicators, including:

- Number of tech labs established and operational
- Student participation levels and teacher training progress
- Number of bootcamps conducted, attendance, and completion rates
- Annual STEAM Fest attendance, media coverage, and engagement indicators

Data will be collected using standardized templates and digital reporting tools to ensure consistency and traceability.

To ensure responsiveness and quality improvement:

- Surveys will be conducted with students, teachers, bootcamp participants, and event attendees.
- Feedback sessions with partner schools and industry collaborators will be organized annually.
- Qualitative insights will be incorporated into iterative adjustments to program delivery.

While conducting the activities evaluation we will **not appoint an external evaluator**. Instead, monitoring and evaluation activities will be conducted collaboratively by the project team and key stakeholders. This decision is based on several strategic, operational, and financial considerations:

1. Strong Internal Expertise and Stakeholder Involvement

The project team includes experienced educators, technical experts, and program managers who possess extensive knowledge of the local context, school environments, and STEAM-related interventions. Their expertise enables them to conduct meaningful and accurate evaluations without the need for external oversight.

Additionally, involving stakeholders such as teachers, school administrators, and partner institutions directly in the evaluation process ensures:

- Context-specific insights
- High levels of ownership and engagement
- Faster feedback loops and immediate improvement actions

This participatory approach strengthens the relevance and practical application of evaluation findings.

2. Continuous and Embedded Evaluation Model

The project will use a **cumulative, ongoing evaluation approach**, which integrates monitoring into everyday project activities. Because evaluation is embedded within the implementation structure, internal teams are better positioned to:

- Observe day-to-day operational realities
 - Respond quickly to challenges or emerging needs
 - Adjust project activities in real time
- An external evaluator working at intervals would not have the same level of visibility or immersion in the project's operational environment.

3. Ensuring Efficiency and Cost-Effectiveness

Appointing an external evaluator would involve significant financial resources, including fees, administrative coordination, and procurement procedures. Maximizing direct benefits to students and schools, allocating these resources toward tech labs, bootcamps, and community events provides greater impact.

By conducting the evaluation internally, the project ensures:

- Better value for money
- Greater proportion of funds directed toward core activities
- Efficient use of existing project management structures

This structure provides accountability while ensuring that evaluations remain aligned with strategic goals and community needs.

The combination of **structured internal oversight, stakeholder participation, and continuous monitoring mechanisms** provides a strong and credible evaluation framework without requiring external evaluators.

5.2 The monitoring and evaluation framework

Output Indicators

Project Component	Output Indicator	Baseline (2025)	Minimum Target (2026-2035)	Max Targets (2026-2035)	Schedule
Tech Labs	Number of tech labs established in schools	0	5 labs operational by 2035	15 labs operational by 2035	Phased installation 2026-2029
	Number of teachers trained to use tech lab equipment	0	20 teachers trained by 2035	60 teachers trained by 2035	Annual training cycles (2026-2035)
	Number of students engaged in tech lab activities	0	150 students by 2035	500 students by 2035	Increasing yearly as labs open
Boot Camps	Number of bootcamps delivered	0	9 bootcamps (1 per year)	18 bootcamps (2 per year)	Bi-annual/ annual 2028-2035
	Number of youth participants enrolled	0	300 participants total	600 participants total	~60/120 participant s annually
	Number of mentorship sessions delivered	0	60 sessions by 2030	120 sessions by 2030	Delivered alongside bootcamps
STEAM Fest	Number of STEAM Fests held	0	6 festivals	9 festivals	Annually 2026-2035
	Number of workshops & demonstrations offered	0	30 total activities	50 total activities	7-10 per festival
	Number of schools and partners on board	Existing informal collaborations	10 partners by 2035	25 partners by 2035	Expanding annually

Result Indicators

Outcome Area	Result Indicator	Baseline (2025)	Target (2035)
Educational Innovation Adoption	Percentage of schools regularly applying STEAM methodologies across multiple subjects	Baseline survey in participating schools	80% of participating schools
Teacher Capacity	Percentage of teachers using interdisciplinary/project-based learning at least once per term	Baseline teacher survey	70% of teachers
Employer Engagement in Education	Percentage of local employers actively participating in educational activities	No baseline system	15 local companies engaged
Community Engagement	Annual attendance at STEAM Fest and related events	Baseline count	Attendance growth of 20% across STEAM Fests
Partnership Strengthening	Growth in school, industry, and community collaboration	Limited formal cooperation	20 active partnerships by project end
Technology Access	Increased access to modern educational technologies	Limited equipment in schools	15 schools fully equipped and using tech labs regularly

Data for the result indicators will be collected through a combination of annual surveys, skills assessments, participation records, partnership monitoring and administrative data. Baseline measurements will be established during the first year of implementation (2026) to enable consistent tracking of progress throughout the program period. Schools will provide data on the adoption of STEAM methodologies, teacher practices and student participation, while employers and project partners will contribute information on collaboration activities and engagement levels. Quantitative data will be complemented by qualitative evidence, including case studies, participant feedback, partner interviews and examples of successful projects, providing a comprehensive picture of the program's impact on education, skills development and the wider innovation ecosystem.

Integration With Project Schedule

- **2027–2028:** Early outputs tracked (first labs installed, first bootcamps, STEAM Fest launch).
- **2029–2034:** Mid-term milestone evaluation to assess participation trends and skill development.

- **2034:** Consolidation of outputs, expansion of partnerships, increased engagement.
- **2035:** Final summative evaluation with full measurement of result indicators

SECTION 6: Conclusion

The Płock STEAM Innovation HUB Plan sets out a long-term vision for strengthening Płock's capacity to develop, attract and retain talent in an increasingly knowledge-based and technology-driven economy. By responding to challenges such as youth outmigration, skills shortages and the need for more innovative educational approaches, the plan seeks to create lasting benefits for students, educators, employers and the wider community.

The proposed program combines investment in educational infrastructure, skills development and community engagement through three interconnected actions: Tech Labs, Bootcamps and STEAM Fest. Together, these actions will help establish a city-wide STEAM ecosystem that connects schools, higher education institutions, employers, cultural organisations and public authorities around a shared commitment to learning, innovation and opportunity.

The ultimate ambition extends beyond the delivery of individual projects. By 2035, STEAM methodologies should be fully embedded within mainstream education across Płock, becoming a normal part of how teaching and learning take place across all disciplines. Through stronger partnerships, modern learning environments and closer links between education and the labour market, the program aims to create a sustainable talent pipeline that supports both individual success and the long-term competitiveness of the city and its wider functional area.

Achieving this vision will require continued collaboration, investment and leadership from all stakeholders. The foundations have been established through the Future STEAM Cities network and the work of the Urbact Local Group. The next step is to translate this shared vision into action and build a future in which Płock is recognised as a city that nurtures talent, embraces innovation and creates opportunities for current and future generations.