



COMPetencies for Agencies for Sustainable Site conversion



PROJECT PROPOSAL

SUSTAINABLE RECONVERSION OF GARA MICĂ (SMALL TRAIN STATION)

Location: Cluj-Napoca, Romania

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0. GENERAL INFORMATION ABOUT THE PROPOSED LOCATION

Name:	Gara Mică (Small Train Station)
Address:	Căii Ferate Street, Cluj-Napoca
Country:	Romania
Current status (abandoned, misused etc.):	Abandoned
Former use:	Train station building
Ownership (public, private, mixed)	Property of a state-owned enterprise
Surface (expressed in m²):	313.4

Photos







ABSTRACT

The project detailed in the following pages describes the regeneration of an unused building in a busy area of Cluj-Napoca. The building in question is called “Gara Mică”, which means “Small Train Station”, as it used to serve as the main building for the now-defunct small train station. It is located in the vicinity of the current train station at one of the city’s main transportation nodes.

The regeneration process actually has grass-roots origins, as organisations took it to themselves to organise workshops and contemporary art galleries for the local artists. The organisations themselves are usually made up of local artists. The most notable event was a month-long artist-workshop/art gallery organised in late 2016 within the framework of the Com’On Cluj participatory budget program. The event was called Spațiu Cultural Gara Mică (Small Station Cultural Space).

The stakeholders of the project are threefold: First, contemporary local artists would have more opportunities to both work and have their work shown to the public. Second, the citizens from Cluj-Napoca would gain a permanent contemporary art gallery dedicated to promoting local artists, which is something that the city is currently lacking. And lastly, Cluj-Napoca, as an entity, would gain tremendously, both domestically and internationally, as such a venue would host international exhibitions and further consolidate Cluj-Napoca as an up and coming international hub.

In technical terms, the project consists of two stages, and the outcome of the project also has two facets. The first stage is the renovation of the building, which is also the most costly part of the project that carries the highest risk. The second stage is the development of a sustainable, participative, non-political life within the walls of the gallery.

The two facets of the project refer, on the one side, to the art gallery/workshop as a place for artists; and on the other side, to the building itself, for which the project has a vision of incorporating several technologies that handle energy and water management in a smart way. The building itself

would serve as a technological exhibit on its own, aimed to educate visitors about energy-saving and renewable technologies.

The biggest weakness of the project is obtaining the necessary financial means for the renovation of the building. The second biggest weakness of the project lies in the fact that its owner is a state-owned enterprise (CFR), with its headquarters in Bucharest. The Bucharest headquarters of CFR also handles the subletting of its assets. This means that they may not care about the potential cultural and educational output of the building as it is distant to them and they would only see financial figures.

Its strength, however, lies in its popularity as a grassroots movement; the potential interest from the part of donors, as well as it fills a void in the current shape of the city.

1. CONTEXT ANALYSIS

Piața Gării (Train Station Square) - or "Baross tér", in Hungarian - is in a neighborhood that few people remember. It is the "Hidelve", located beyond the bridge over the Someșul Mic river, in the northern part of the city. "Hidelve" or "Beyond the Bridge" is the oldest neighborhood of Cluj, located in the vicinity of the medieval fortress.

Located on the left bank of the Someșul Mic river, Hidelve includes Fellegvár - the hill of Cetățuia - as well as the area that borders Ferenc József street - the current Horea street - stretching to the city's train station. The neighborhood, once inhabited by an important Saxon community, was established at the end of the 17th century and was documented in 1712 under the name "Vetus Extramoenia", ie the "Outer Old Town".

The intense industrialization and economic development of Cluj-Napoca has led to an increase in the flow of population moving to work in the main urban center of Cluj County, putting pressure on the transport infrastructure in the area, especially on the roads from the main labor-supplying localities to the nearest entrance to Cluj Napoca. This trend has led to the construction of the Small Railway Station, designed for short trips and serving the population residing in the other localities of the county, who were traveling for work to Cluj-Napoca. The architect, Ilie Dumitrescu, designed the building in a modernist-socialist manner, characteristic of the architecture of the 1970's. In the same period, due to the significant increase in the city's population, the tram was inaugurated in 1987.

The closing of the small railway station was the natural consequence of the factories shutting down in Cluj-Napoca. The reduction of the industry has also reduced the number of tram journeys. Moreover, since January 1991, following the general trend of the post-revolution period, the Local Transport County Enterprise has been decomposed into autonomous local transport units for each municipality in the county. Thus, in the municipality of Cluj-Napoca, Regia Autonomă de Transport Urban de Călători (RATUC / Autonomous Urban Passenger Transport Company) was established.

The proposed location, Gara Mică, is the property of the Romanian railway passenger transport company. It is not a heritage building of Cluj-Napoca. The urban plan does not allow any modifications to the structure and façade of the building, which might constitute an impediment; on the other hand, temporary external modifications are allowed. Any modifications to the building through the reconversion project are consisting of the addition of unmountable structures to it.

From the point of view of urban and metropolitan mobility, the Train Station's Square is an intermodal node and provides direct connections with the main areas of the city (Andrei Muresanu, Bulgaria, Old Town, Gheorgheni, Grigorescu, Iris, Intre Lacuri, Marasti, Manastur and Zorilor) (through Bus lines 9, 22, 27, 32b, 35, 39 and 47b; trolleybus lines 3 and 4, tram lines 100, 101, 102, 102L + 8 routes that connect with most of the metropolitan areas of Cluj). (See Annex 1)

The city's two main bus stations, Fany and Beta, serve national and international destinations. They are located northwest of the train station, approx. 800 m away. One needs to cross over the railway line on a bridge, or under it through an underground passage. The Rail Station is the main gateway to the Metropolitan Area of Cluj, it provides access to/from all important cities of the country and international connections to/from Hungary, Austria, Germany, Poland and the Czech Republic.

Being positioned at the centre of the Transylvanian greater region, Cluj-Napoca connects all the main roads of Transylvania (DN1: Turda - Alba Iulia - Sibiu, E60: Zalău - Oradea - Cluj Napoca), thus endowing the city with the status of a transit city around which most of the peripheral regions gravitate, which has facilitated its development in economic, social, cultural and political-administrative terms. In fact, with Cluj-Napoca being the main urban center of the North-West Region, through the multitude of its functions (economic, financial, educational and medical), it receives the role of supra-metropolitan polarization.

Avram Iancu International Airport is located in the eastern part of the city, about 8 km from the center. Cluj-Napoca's Airport is the second largest

Romanian airport in terms of passenger traffic, with a total traffic of 1,180,000 passengers in 2014. It is remarkable that more than four-fifths of passengers board international flights (83.7% in 2013). Avram Iancu International Airport can be accessed from Traian Vuia / European road E576. The public transport operator CTP offers two routes from the bus station near the airport: line 8 to Mihai Viteazul Square (1.5 km away from Garii Square), which runs every 15 minutes on workdays between 05.00 and 18.00, and once every 20-30 minutes between 18.00 and 22.40; Line 5, which runs less frequently (every 15-30 minutes) between 06.00 and 21.00.

In conclusion, the chosen location is favored from the point of view of accessibility, but also through the Urban Zonal Plan because the investment made in the regeneration of Train Station's Square, which has been completed not long ago. This investment makes it easy to renovate the Gara Mică building because it will not be antithetical to the new look of the market itself.

The social, economic and environmental context of the area is not a decisive factor, because an art gallery is an important location at the municipal level, just like a botanical garden or a library. There are, however, some aspects worth mentioning.

Gara Mică would not be the only building in the area bearing technological significance, as the technological innovation centre, Liberty Tech Park, is located in the vicinity. Thematically speaking, a building which houses a technological exhibition pertaining to sustainable, intelligent buildings, would be a boon for the nearby innovation centre. The area also has a multifunctional character, due to the public administrative buildings (CFR), the residential buildings (houses, apartment blocks), commercial buildings (stores, supermarkets, specialty stores, pastry shops, cafes, pharmacies, etc.), accommodation units (hotels, villas, short-term rented apartments), buildings belonging to the civil society, non-profit organisations, educational institutions (university buildings, high-schools), as well as green areas (Cetățuia Park, Feroviarilor Park).

There is only one art gallery in the area (towards the city centre), meaning that there is a real need that the project would fulfill, even on a local

plan. The proposed location is an abandoned building, located in a highly visible spot, frequently transited by many people; there has already been an initiative to utilise the building as an artistic space, a grass-roots initiative of an artist from Cluj-Napoca which turned out to be a great success. The project would also include the creation of workshops in the small rooms at the back of the building, thus facilitating cooperation and communication between contemporary artists. The proposed art gallery could potentially become a major contributor to the development of the artistic and cultural life in the city, and also in the establishment of good international relations. It is also worth mentioning that the architecture, the structure and the location of the building makes it ideal for hosting international exhibitions.

The conversion proposal is therefore not only sensible for the prospective development of the city, and its potential in fulfilling a need for cultural affirmation on an international level, but also a worthwhile one for the community of Cluj-Napoca. We propose a cultural reconversion project carried out in a socially, financially and environmentally sustainable manner. The cultural value inherent to such an artistic centre will be enough to satisfy even the needs of future generations, by raising awareness in a positive manner about the shared responsibility towards our surroundings that we each carry. As the old proverb states: "we do not inherit the earth from our ancestors, but borrow it from our descendants".

2. DEVELOPMENT OF THE PARTICIPATORY PROJECT PROPOSAL

As already mentioned, the idea of the project is inspired by the initiative of local artists from Cluj-Napoca. They (the Gara Mică Group) created a temporary art space after applying and winning first prize in the participatory budgeting youth program Com'On Cluj 2016. The initiative through which the project could be implemented was also a participatory action because it was subject to the online vote of the residents of Cluj-Napoca.

The present proposal is to change the character of the project from temporary to permanent and sustainable. The "Berlin în Cluj Cluj în Berlin" project

proved to be a great success, which led to the involvement of the artist Stefan Botiș (one of the initiators of the concept) in the creation of this project. Through this project, a functional, financially sustainable gallery could be created, one that achieves its intended purpose of facilitating local artists and promoting art, thus contributing to the affirmation of the cultural status of Cluj-Napoca on an international level.

The concept of the gallery's sustainability is based on participatory action. This is due to the nature of the project, which envisions the regeneration of a building that would serve as a meeting point between artists, as a space for creating art and hosting exhibitions, and last but not least, as a platform where the people and the visitors of this city have access to a significant cultural gain. These roles are achievable through the following two measures:

First of all, besides special events (workshops, lectures, international exhibitions, etc.), the gallery will be open to the public free of charge. Special events (with entry based on ticket-purchase) are designed to ensure the minimum income required for the gallery to be financially viable, and to make it possible for the visits outside special events to be free of charge.

The gallery will exhibit the works of young artists (up to the age of 35) in Cluj-Napoca. Applications will be based on resume, portfolio, essay, depending on the chosen topics (each at a set interval), and will be selected by a jury. The jury itself will be chosen on an invitational basis by the organisation responsible for the management of the gallery. A new jury will be invited for each application period.

Thus, the works of young talents will be constantly displayed and promoted, fruitful collaborations will be established, and the public will constantly have the opportunity to enjoy new exhibitions.

3. THE TECHNICAL ASPECTS OF THE PROJECT PROPOSAL - DESCRIPTION

The building complex of the train station is located on the northern side of square, and the buildings are aligned on the East-West axis. The main entrance

of the edifice faces towards the square, thus ensuring access to individuals coming from that direction.

The lean-to roof of the building is held up by two beams, which were constructed in a monumental fashion. One of the main features of the building is the multitude of windows, which, on the one hand, allows natural sunlight to flood into the main room, while on the other hand creating harmony between the antagonistic concepts of fullness and emptiness. The main room can be accessed directly through the entrance and exit of the train station, and is placed in an unregulated ambiental space, thus breaking sound in such a way that the public space becomes an intimate one, because to how the sounds of neighboring conversations are distorted. A spiral staircase leads from the main room to the edifice's entresol, a space where weary commuters could once rest until the train arrived to the station.

The morphological and geological aspects of the area will not be affected. The only changes from an engineering standpoint will be the installation of new technologies for the conversion and utilization of solar energy, as well as the installation of vacuum insulation panels (VIPs). The potential urban impact of the project is that there will be a larger stream of people going through this area. This, however, is not a threat, because, as it was also previously described, the local transportation system can handle it. (See the attached General Urban Plan – annex 2)

From an architectural standpoint, the exterior of the building will not be modified, only the interior through refurbishment and the usage of new materials. A modest garden will be maintained around the building, thus granting it an organic aspect in an area which is otherwise rather industrial and lacking in green spaces. An important element of this garden will be the vines which will climb on the narrow wall sections between the windows, thus harmonizing the building with its surroundings. (The building plans can be seen at annexes 3 and 4)

The necessary steps for implementing the conversion process can be described as being the following:

Thermic performance evaluation – The evaluation of current thermal

efficiency, compared to the projected efficiency of the building after the following insulation measures are taken: advanced thermal insulation material used at the exterior walls, roof and the floor of the basement. Furthermore, the projected model will include the utilization of a high-performance foam substance introduced between the layers of bricks from the walls. The evaluation will also include comparisons between different window technologies: vacuum panels, aerogel, ionizing layer, etc. These evaluations are very important for comparing energy costs and to estimate a period of cost-return (expressed in years).

Evaluation of thermal fluctuation – Create a simulation model of the projected efficiency of an interior layer of Phase Change Material, in order to reduce thermal fluctuation. Cost analysis of investment saved from air conditioning equipment and its usage.

Lighting design – Using Dialux software, we will evaluate and design the lighting of the space, taking into consideration both ambient light and spotlight placement. This will help evaluate costs for high-performance LED-lights, as well as their energy consumption. The software will also help determine whether an interior reflective surface would be useful in order to save electricity consumption. This design can then be integrated into a complete circuit with PV solar panels, as well as any other energy consuming equipment, such as computers, screens and air conditioning. An efficiency and price comparison should also be made with other PV options, such as solar tiles, as well as Evaluarea valorificării unei sisteme de fotovoltaice integrate pentru iluminare, respectiv difuzoare, calculatoare, etc. Evaluarea necesității și eficienței a tehnologiei Tesla Powerpack și Solar Roof. Batteries for electricity storage. Solar tiles would especially be worth considering, since they also improve the esthetics of the building, which is an important element for an art gallery.

Evaluation of potential efficiency of an integrated cooling and warming system using water through pipes.

Renovation works – Removal of old materials, recycling where possible (for example the glass from the windows). Removal of old electric and thermal installation, as well as the old plumbing. Fixing any potential structural risks at the level of the basement, the main walls or the supporting beams. Remake the

electric and thermal installation. Install new plumbing. Install air conditioning ducts. Installation of a small water collector, as well as a micro irrigation system for the surrounding garden. Application of thermal insulation foam between the walls.. Application of external thermal insulation layers. Application of Phase Change Material layers. Interior renovations, including basement level and toilets, as well as repurposing the smaller rooms as workshops. Rebuilding the roof. Connecting the PV system to the integrated electric grid, together with battery and consumers. Installation of windows/vacuum insulation panels. Fixing lighting equipment. Completing the landscaping work around the building.

The necessary workforce, machinery and materials are all available in Cluj-Napoca, thanks to the recent exponential growth of new constructions, especially those that have received a high EU energy score. This is partly due to the marketing of 'green' apartment blocks that have a lower consumption of energy. Even though the apartments from these blocks are more expensive, they are still worth the purchase due to the high cost of electricity of gas. The only special competences (and related pieces of equipment/machinery) that will be necessary are the following: the installation of an integrated PV circuit, complete with batteries and possibly solar roof tiles, the installation of especially large windows, the insertion of the foam substance between the layers of bricks using 25 mm² tubes, as well as the different techniques used in landscaping, and the growing of the vines on the side of the building.

Of these competences and pieces of equipment, the more problematic ones from an availability perspective are the batteries and solar roof tiles (as Powerwall and Solar Roof from Tesla are the only ones on the market that meet the criteria), which can be ordered from outside the country, and the insertion of the foam substance between the layers of the walls. As far as the latter is concerned, a consultation with companies which have a portfolio of 'green renovation' will be necessary in order to obtain a clearer picture of the availability of this technology on the Romanian market. The rest of materials, competences and equipment will not be challenging to acquire.

According to the calculations done through the software accessed on the following link: <http://re.jrc.ec.europa.eu/pvgis/apps4/pvest.php#>, the PV system installed on the rooftop would supply at the very least 10200 kWh/year.

This quantity of energy, together with the measures taken in order to insulate the building, as well as the low number of electricity-consuming appliances, would result in an almost passive building. (Annex 5)

The main electricity-consuming devices will be the air conditioning, the lighting, the computer from reception, and devices used for special events, such as sound systems and projectors. Because the building is currently unused, it is difficult to estimate the amount of energy that is consumed. We can, however, make estimations based on calculations of electric and thermal energy saved, were we to use the building without converting it, versus using the building after the conversion project is finished. We can exemplify this with study cases made by SusChem, the European platform innovation in chemical sustainability. According to their research, 20% of the energy necessary for lighting a room may be saved by applying an interior reflective coating. Alternatively, we could use this higher interior lighting efficiency to reduce the number of expensive windows installed and save money that way. The utilization of LED light bulbs, together with the aforementioned interior reflective coating, could potentially contribute to major savings in the cost of lighting (40% compared to other technologies).

Moreover, by using a layer of PCM (Phase Change Material) in the inside of the building, we can drastically reduce the number of hours when the interior temperature exceeds 26 degrees Celsius, which is usually when the cooling system activates. PCM is also available on the market as an active ingredient in a wide variety of semi-finished products, such as: cement, plaster, drywall, as well as multifunctional modules for roofs and walls. When installed, this material absorbs a part of the excess heat during the day and releases it during the night when it is colder. Practically, PCM improves the thermal inertia of the walls, and acts similarly to the thick stone walls used hundreds of years ago. According to SusChem, we can expect around 10% energy savings using this interior coating. Moreover, it could drastically reduce the size of the air conditioning equipment necessary for the building, therefore being an investment with immediate return.

By utilizing the high-performance foam substance between the brick layers of the walls, as well as layers of advanced insulation materials on the outside, we can expect up to 80% savings on the energy necessary for both

heating and cooling. Another option would be the installation of Vacuum Insulation Panels. The drawback of these panels is their high cost. The advantages, on the other hand, would be enormous. They could be utilized, for example, in place of the glass façade as well, not only at the walls. And in the unlikely event that one of them fissures, it would still act as an aerogel, which is a high-performance thermal insulation option. Due to the flexible application possibilities of the technology, the panels can become an integral part of the building's architecture. In case that they remained undamaged, the entire building would become a passive unit once a solar roof is also installed. In this case, we would have a return on the investment in about 10 to 15 years, after which the building would register net gains thanks to the energy savings. The panels also have the advantage of not requiring any special skills for their installation.

The impact on GHG production would be minimal, for the following reasons: 1. The building has not been utilized so far, meaning that we would increase the consumption on energy. 2. Even if we were to forego planning a passive unit, the building would still gain its electricity from a hydro plant. 3. There is only a very limited possibility of introducing vegetation to the surrounding area. Overall though, the building would not produce any GHG, therefore being beneficial as a point of inspiration for other, similar projects.

There are currently two measures taken into consideration in order to reduce excess water consumption. The first would be the utilization of a rainwater collecting system for the irrigation of the garden that will be planted around the building. This is a particularly practical solution because the roof is inclined towards the back of the building, and allows the water collecting system to gather 100% of the water that falls on the roof, as well as being out of sight. The second measure would be less practical, but with a much higher visibility impact. An integrated system, with a symbiotic esthetic aspect, that would refill the reservoirs from the WC with water used to wash hands at the sink. Although this would not mean a significant amount of water saved, it would, however, have a high impact as far as raising consciousness is concerned.

The art gallery would not produce a lot of waste during the reconversion process. A large part of the waste produced would also be recyclable waste

(copper electric cables, glass, metal plumbing, etc). The waste generated by the gallery post-conversion would not be toxic, except for oil-based paints used by artist in the workshops. These oil-based paints would be obtained by a process of evaporation from the water used to clean instruments, and given towards recycling afterwards. Any remaining waste, whether generated by the artists, or leaved behind during special events, would also be recyclable.

4. THE SOCIAL, CULTURAL AND ENVIRONMENTAL PURPOSE OF THE CONVERSION PROJECT

Gara Mică has been part of the Cluj-Napoca landscape since 1947, and has served the population of Cluj County travelling to work on a daily basis.

After 1989 the factories of Cluj County started to abolish at an accelerated pace, hence the short-distance passenger flow diminished, and in 2010 the decision was made to shut down the Small Train Station.

For 5 years the building has been abandoned for several logistical and legislative reasons, until a handful of people have seized the possibility of transforming this space into a cultural center.

The cultural and social benefits that come with the establishment of a cultural space within this building are enormous. In Cluj we have a big shortcoming, namely the lack of spaces dedicated to contemporary cultural activities, especially contemporary visual art. Nowadays there are many galleries but we do not have a contemporary art museum. Of course there is no claim to transform Gara Mică into a museum, but into a space that hosts a variety of cultural events from exhibitions to concerts and film screenings, public debates and theater. We expressly encourage intercultural activities that involve the organization of mixed exhibitions as we did in 2015 with the "BerlinÎnClujÎnBerlin" Exhibition, which brought contemporary artists from Berlin with local artists. The entirety of the project was well received by the public. Thus, the cultural benefits include the fact that this space would allow us to host both important exhibitions from the European and global contemporary world of art, as well as exhibitions with emerging local artists.

In Cluj we have one of the best art universities, or perhaps the best in the country, so the most prominent high school graduates come to UAD in Cluj to study art due to the guarantee of receiving the best guidance in the field of fine arts. Unfortunately, what is happening with the recent graduates of the faculty of fine arts is tragic. They are struggling with the problem of finding spaces that they can use to carry out their specific activities, for such places are few and often expensive. Finally, these young people are forced to leave the city, and as a result, Cluj loses a great deal, missing out on the cultural potential they represent.

Gara Mică will be a place for meetings and debates, a liberal place without obsolete dogmas, a place where people can speak without feeling any outside pressure, a place where we develop socially, but also on a cultural and intellectual level, a place that will have special guests, active in various topical areas, who will support conferences and interact with the audience.

In addition to the fact that the "Spațiul Cultural Gara Mică" will support the local cultural life, it will also organize special events such as biennials and triennials, and various competitions which will be accessible to interested individuals from all over the world, thus gaining a place on the map of cultural pilgrimages.

The plans for maximizing the energy efficiency of the "Gara Mică" building include the installation of high-performance windows or vacuum insulation panels, as well as the installation of PV solar panels in order to insure the well-functioning of the electric and thermal system of the building, while minimizing consumption. Moreover, we are considering installing a smart and interactive system for measuring indoor and outdoor conditions (temperature, humidity, system efficiency, etc.). Rainwater-collection will be part of the water efficiency strategy; it will be used to irrigate green areas in the vicinity of the building but also for domestic use. Besides rainwater, we will use capacitors that can be integrated into the building's architecture and can generate water collected from the air.

From an environmental point of view, the building will be as autonomous as possible using renewable energy sources. As a result, the Train Station can

become an attraction and a positive example about how to create an environmentally friendly space.

In conclusion, the Gara Mică Cultural Space aims to develop and support contemporary art in a building that expresses its contemporaneity through the innovative technologies it will possess. All of this is a powerful statement for the entire Cluj community, exemplifying the real interest we have for cultural and technological development.

5. RISKS AND EXTERNAL FACTORS

First, the risk of (non)financing can be improved by reducing the costs of regeneration. This can be achieved, for example, by abandoning the integrated technology of solar panels in tiles and battery, postponing it for a subsequent work. Meanwhile, a high reflective layer would be installed on the roof so as to reduce the heating of the building during the summer. Also, the cost of setting up the surrounding garden can be deferred until later (in this case the water collector could be postponed as well). As for the rest of the technology, however, their application can not be postponed. Finding the necessary funds from different sources (donor circles, public donations, investments, European funds, bank loan, etc.) is therefore the highest priority of the team.

The second major risk mentioned can be solved through a viral marketing campaign of the gallery. With a heightened interest of the public, the Gara Mică gallery could more easily attract partners to organize the events necessary for it to become financially sustainable: international exhibitions, workshops held by outstanding masters of the trade, etc.

Another solution for this risk is the careful selection of international and local partners for a first opening of the gallery. If this first vernissage is executed well enough, it could guarantee a long-lasting interest for both local visitors and international partners.

Apart from these two risks, there is, of course, the risk that current owners, CFR, will not want to carry out the project due to lack of confidence in its

feasibility. But the team is confident that it will be able to implement the project.

6. BUSINESS PLAN

Building regeneration costs:

1. PCM cost - for a surface of approximately 700 square meters, with a cost of 36 €/m², we arrive at a total cost of 25.200 euros. The money saved by reducing the size of the air conditioning system necessary for the building by 5 kWh would be approximately 12.500 euros. At the same time, the number of hours that the air conditioning system would have to function will be reduced by approximately 350 hours a year. In total, the investment into PCM would yield a return in 8-12 years.

2. VIP (Vacuum insulation panel) - 1.000-1.500 square meters (depending on how many sections of window will be replaced with VIP). Price 35-50 €/m² - Total price of around 70.000 €.

3. Cost of windows - 20.000 €.

4. Solar Roof + Power Pack - 60.000 € + 10.000 €

5. Cost of interior renovations - 40.000 €

6. Cost of landscaping + water collecting system - 5.000 € + 2.500 €

7. Cost of air conditioning + other equipment, such as lighting - 10.000 € + 30.000 €

Approximate final price - 300.000 € (272.700 €, to which we have added a 10% budget as a precautionary measure).

Time estimated until a return on investment is made for the insulating materials and solar PV system - 15 years

Time necessary for the complete return on the investment - 20 years

Price/year of energy consumed by the building - 0 €.

The aim of the gallery would not be to obtain a financial gain, but rather to promote art and local artists. The business plan, therefore, is easier to make considering that the financial target is a minimum of 0 RON. This entails managing to pay off all of the monthly expenses. The original estimate for the rent was 5000 €/month, but it turns out that it is much cheaper: around 1000 €/month. The cost of electricity will be zero. All that remains are the costs of different services, such as landscaping, cleaning, security, as well as water. Add to this the salaries of the employees and the administrators of the gallery, and the end result is 4000-6000 euros a month, placing the yearly minimum financial goal at 60000 €.

This sum can be covered with just two international fairs a year, as these would make up a significant percentage of the income. Even with only one international fair a year, 12-18 small events each year would more than make up for the rest of the budget.

7. FINANCING PROGRAMMES AND MARKETING STRATEGY

The financial sources are being searched for while considering the main goal of the project, which is to promote contemporary local art.

The small train station is situated in the Municipality of Cluj-Napoca; it is part of the city's landscape and has the potential to bring tangible benefits to the city. The main source of financing and the main collaborative partner could thus very easily be the local administration, which carries the responsibility of allocating funds for different projects based on cultural and social actions and activities.

Also on a local scale, conferences will be organized in order to disseminate information about the projects that are to take place at the "Gara Mică" Cultural Space. We are referring to the "Cluj-Napoca Circle of Donors", where the elite of the local entrepreneurs gather at the behest of organizers from a wide variety of projects, in order to provide funding. This kind of approach to gathering funds works especially well because the current legislation exempts the donors from certain taxes. Besides the approaches listed above, there is also

the possibility of collaborating with and gaining financial support from foreign cultural organizations based in Cluj, such as the German Cultural Institute, the French Cultural Institute and other entities whose main purpose is to spread their autochthonous culture. This kind of collaboration could be fruitful for both sides through organizing thematic expositions, conferences and other common activities. Last, but not least, we will apply for European Development Funds, which would allow for the modernization of the facilities to take place, in order to better accommodate the gallery, the artists, the visitors and any activities that might take place.

Attracting potential sponsors that are involved in different activities could potentially help us improve the quality of the events, for example: if we need accommodation for participants or guests, we could build a partnership with units of accommodation. This kind of partnership based on “in-kind” sponsorship can extend to a wide variety of services.

On a national plan, the main partners for collaboration would be the Romanian Institute of Culture, but also other similar organizations such as Galeria Electro Putere Craiova or Fabrica de Pensule Cluj.

The expenditures covered by the aforementioned sources must be sufficient to: modernize the “Gara Mică” building, pay the monthly rent, security, maintenance and auxiliary expenses. The estimate of the modernization of the building, and its transformation into a cultural space is between 300000 and 500000 euros. The cost of rent remains to be negotiated with the national railway company (CFR). The best case scenario for the administrative costs, including the salaries of the employees, is that they will be subsidized by Cluj-Napoca City Hall, as well as covered from the profits made from the activities that will take place at Gara Mică: film projections, theatre productions, expositions, conferences, etc.

The main goal of Gara Mică Cultural Space is the promotion and support of contemporary cultural values, and this can be only be achieved by encouraging and promoting emerging local, national and even foreign contemporary artists. The value of the project is amplified by the city’s serious necessity for cultural spaces. One of the more efficient marketing strategies

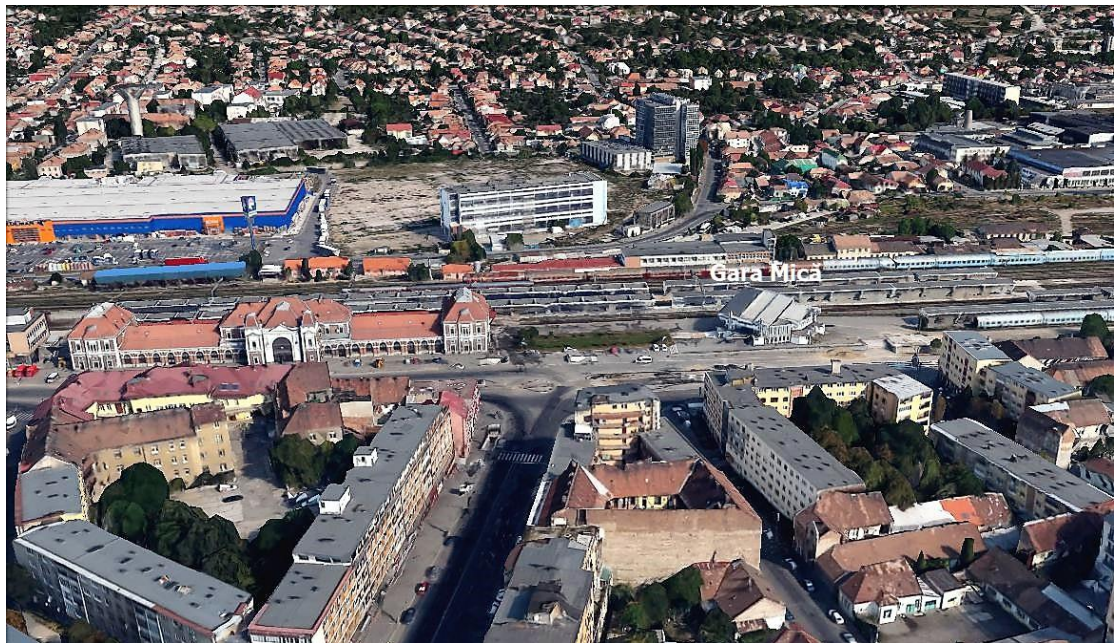
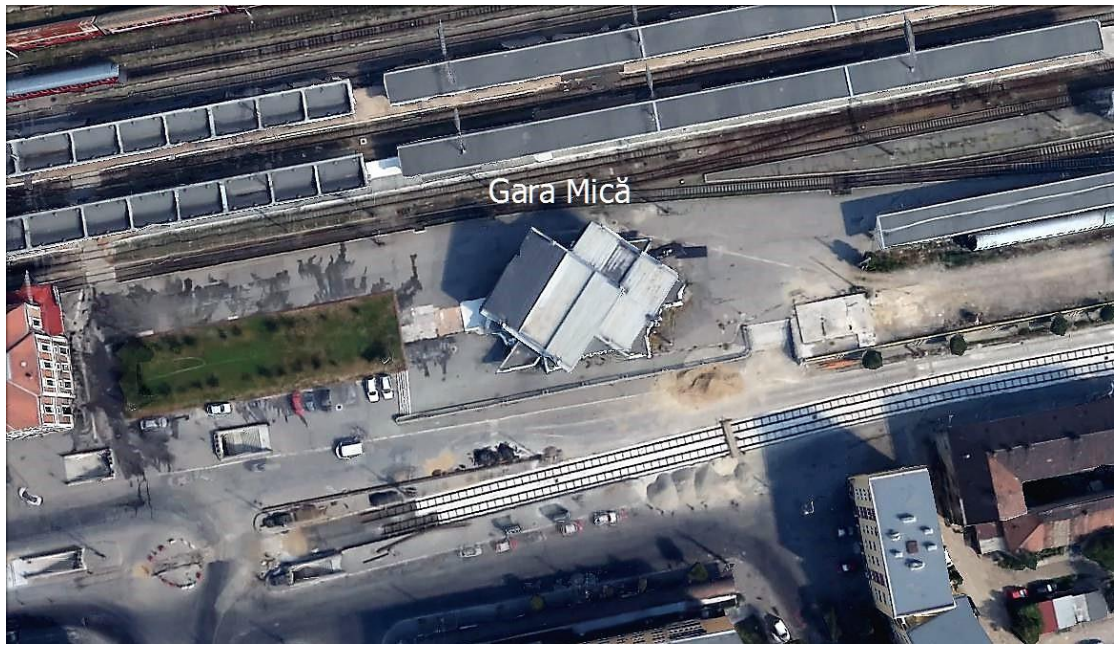
would be to use the cultural space within the framework of festivals such as TIFF or Cluj Never Sleeps, as the building is large enough to house film projections or other artistic projects based on projections. Moreover, hosting a serious contemporary exhibition with international significance would have a positive spillover effect onto Cluj-Napoca as a cultural city, bringing more visitors, and having a positive economic impact for both Gara Mică, as well as the municipality.

The multiplication strategy at an international level begins with the name of the cultural space, Gara Mică – Small Train Station, as it was used from 1976 until 2010 as a train station by travelers. Symbolically, the station is a meeting place, where the paths of people from different geographic backgrounds cross. It is only natural, therefore, that the project would extend its influence nationally and internationally, giving birth to common expositions and events that would bring artists from different nations and cultural backgrounds under the same roof.

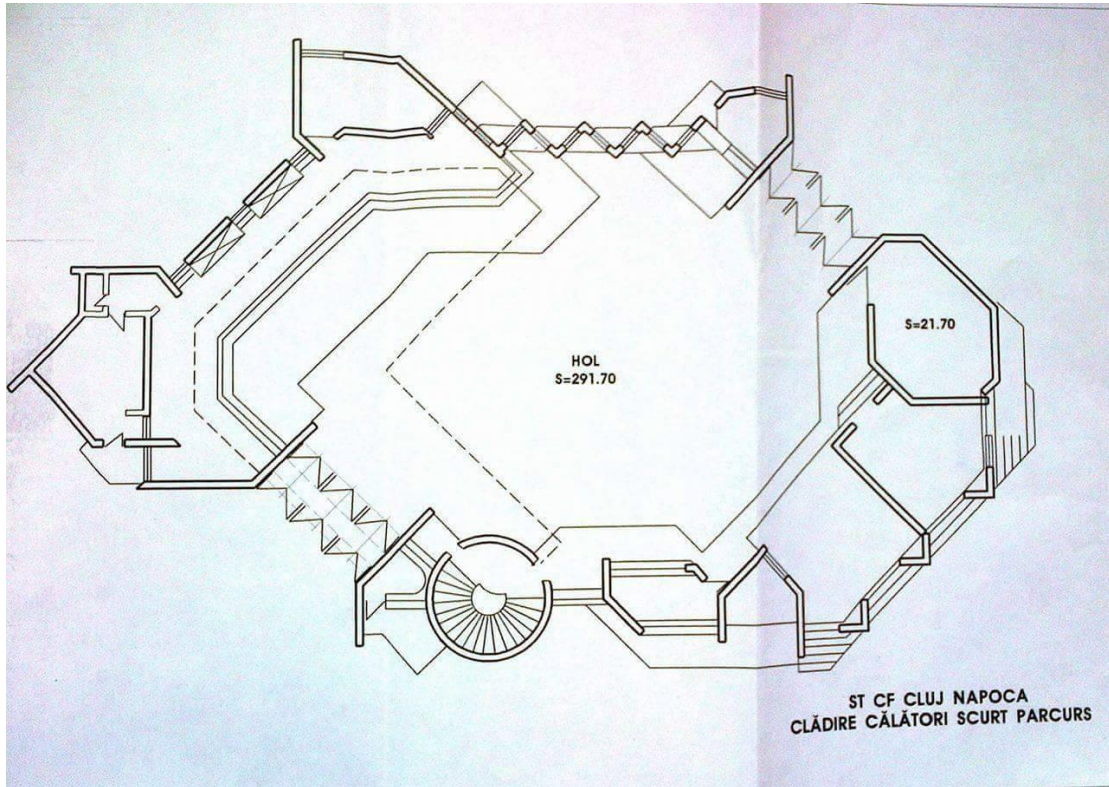
Annex 1



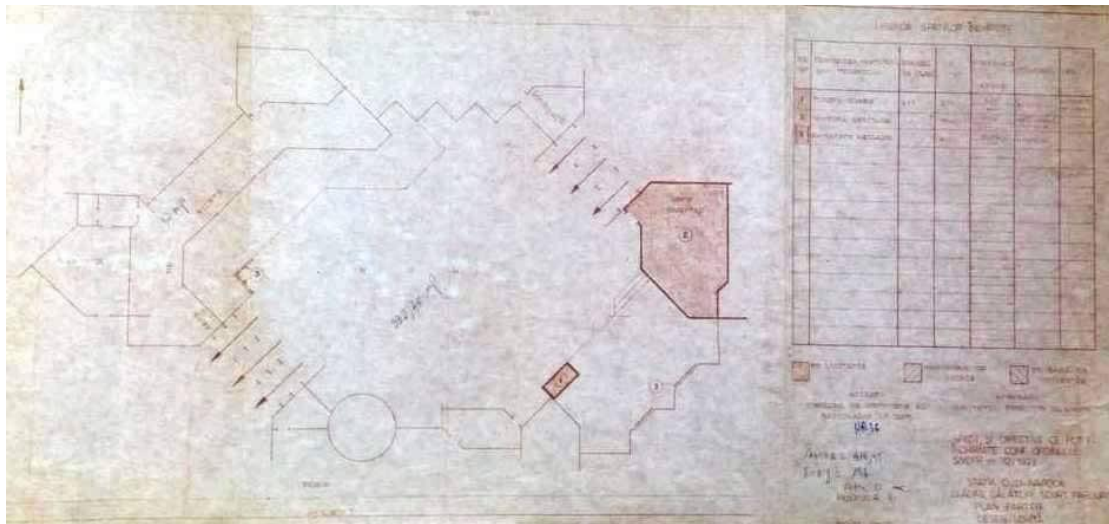
Annex 2 (page 2.)



Annex 3



Annex 4



Annex 5



Performance of Grid-connected PV

PVGIS estimates of solar electricity generation

Location: 46°47'4" North, 23°35'18" East, Elevation: 337 m a.s.l.,
Solar radiation database used: PVGIS-CMSAF

Nominal power of the PV system: 10.0 kW (crystalline silicon)
Estimated losses due to temperature and low irradiance: 14.8% (using local ambient temperature)
Estimated loss due to angular reflectance effects: 3.0%
Other losses (cables, inverter etc.): 14.0%
Combined PV system losses: 29.0%

Fixed system: inclination=35 deg., orientation=0 deg.				
Month	Ed	Em	Hd	Hm
Jan	13.00	402	1.64	50.7
Feb	19.10	533	2.46	68.9
Mar	30.90	959	4.22	131
Apr	34.50	1040	4.94	148
May	35.90	1110	5.26	163
Jun	36.60	1100	5.46	164
Jul	38.00	1180	5.65	175
Aug	37.70	1170	5.59	173
Sep	32.00	960	4.55	136
Oct	27.20	844	3.73	116
Nov	18.20	547	2.39	71.6
Dec	10.80	334	1.36	42.1
Year	27.90	848	3.94	120
Total for year		10200		1440

Ed: Average daily electricity production from the given system (kWh)

Em: Average monthly electricity production from the given system (kWh)

Hd: Average daily sum of global irradiation per square meter received by the modules of the given system (kWh/m²)

Hm: Average sum of global irradiation per square meter received by the modules of the given system (kWh/m²)