

The Conversion of Abandoned Heating Points in Romania - Typologies and Social Impact

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Abstract

During the communist period, in Romania were build a lot of apartment flats that had alongside them industrial heating points. In the late 90's a new trend began to appear: the one in which each apartment has its own heating system, leaving behind the old district heating system. This is the moment when the problem of abandoned spaces inside a living area of the city started to grow and to slowly become an important issue for the community because of the unsafe and unhealthy environment they produce. The subject of industrial buildings that don't have an architectural value is not as debated as the one of the "industrial heritage" although they are a part of the urban matrix and influence the life of the citizens. Local authorities found solutions to improve life in some urban living areas by giving the abandoned industrial constructions a new use and a new look. The purpose of this paper is to analyze the typology used in Romania in the conversion of an industrial heating point in order to find new possible solutions to bring back to life the remaining abandoned places. Going beyond the aesthetic of the conversion, it is important to see the social impact that such a transformation has upon a district and even upon a city. The different aesthetical approach used to revitalize an old industrial building combined with the right function can give a new life to an otherwise avoided area. The simple presence of human beings in a place can reactivate it and make it a landmark. This paper presents relevant case studies of conversions that analyze the buildings using different criteria in order to show how they can become a "social catalysts".

Rezumat

În perioada comunistă, în România au fost construite numeroase blocuri de locuințe care aveau alături centrale termice de cartier. La sfârșitul anilor 90 a început să apară un nou trend: Acela în care fiecare apartament are propriul sistem de încălzire, lăsând în urmă vechiul sistem centralizat. Acesta este momentul în care problema spațiilor abandonate în arealul locuințelor colective din oraș a început să apară și să devină încet o problemă pentru comunitate datorită mediului nesigur și nesănătos pe care îl generează. Subiectul clădirilor industriale care nu au o valoare arhitecturală deosebită nu este la fel de dezbătut ca și cel al "monumentelor industriale" deși ele fac parte din matricea urbană și influențează viața cetățenilor în egală măsură. Autoritățile locale au găsit soluția pentru a îmbunătăți nivelul vieții în unele zone urbane prin schimbarea funcțiunii și a designului exterior a clădirilor industriale abandonate. Scopul acestei lucrări este de a analiza tipologiile utilizate în România în schimbul de destinație al centralelor termice de cartier pentru a găsi posibile soluții de a readuce la viață ruinele existente. Mergând mai departe de aspectul

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formal al conversiei, este important de observant și impactul social pe care o astfel de transformare îl are asupra unui cartier și chiar asupra unui oraș. Diferitele abordări estetice folosite pentru revitalizarea clădirilor industriale combinate cu o funcțiune corectă pot oferi o nouă viață unei zone care altfel era evitată. Simpla prezență a omului într-un spațiu îl poate reactiva și îl poate transforma într-un reper pentru comunitate. Lucrarea de față prezintă cazuri relevante de schimburi de destinație care analizează clădirile folosind diferite criteriiul demolării parțiale sau totale a unor elemente, cu scopul de a prezenta cum acestea pot deveni un “catalizator social”.

Keywords: abandoned heating points, conversion, social impact

1. Introduction – about district heating systems and its image around the world and in Romania.

District heating systems first appeared in the United States in the 1880s and in Europe in the 1920s. They are the most economical way to provide heating steam and hot water to urban zones according to the Danish District Heating Association.[1] A big advantage of using district heating is avoiding explosions and fire inside the building flats. In the Western European countries, because of the strict legislation, modernization of the installations and use of different local fuel or heat resources that otherwise would be wasted (waste incineration, surplus heat from industrial processes or fuel refineries, natural geothermal heat sources, fuels difficult to handle and manage in small boilers as most combustible renewables as wood, waste, peat, straw, olive residues)[2], the system is a competitive one considering the low price, high performance in generating sufficient heat to the population to maintain a certain lifestyle and environmental considerations.

On the other-hand human perception of district heating is usually associated with the communist period in many countries from the Eastern Europe block. [3] In Romania after the 90s, its image became more and more negative because of the embracing of a liberal thinking and the desire to individually control the heating for each apartment. To be able to configure the network in order to meter the public consumption, requires expensive work that not everyone is willing to cover. District heating has a bad reputation here also because of the frequent problems that occurred because of the old installation. The heating system used in the former communist bloc are outdated, in Romania more than 32% of the equipment used for heating is over 30 years old and the infrastructure is between 20 and 30 years old. [4] Having to face huge costs every month in order to pay for the system's losses, a lot of Romanian people decided to disconnect from the network and to buy individual heating systems for each flat. According to the Overview of National DHC Market from 1997 to 2002 more than 500 000 flats were disconnected from the district heating network in Romania. [5]

An analysis made by Ariston Thermo Romania states the fact that 67 of 320 towns that had a central district system are still connected to the network. Three major cities receive thermal energy in a district system – Bucharest, Timisoara and Cluj Napoca. Alongside them Constanta, Craiova, Ploiesti, Galati, Iasi, Brasov, Pitesti, Oradea and Arad. Timisoara and Cluj Napoca started to deal with the problem of disconnection since 2012. A national statistic points out that Cluj Napoca owns second place whereas disconnection from the central system.[6]

Figure 1 presents the state of the district heating system in Romania by regions. Alba, Salaj, Caras Severin, Satu Mare, Maramures are some regions that don't use at all the central system to provide heat and hot water to the apartment buildings from around. There are some district heating points that still function, but they supply only schools or, in the case of Alba Iulia, the courthouse.

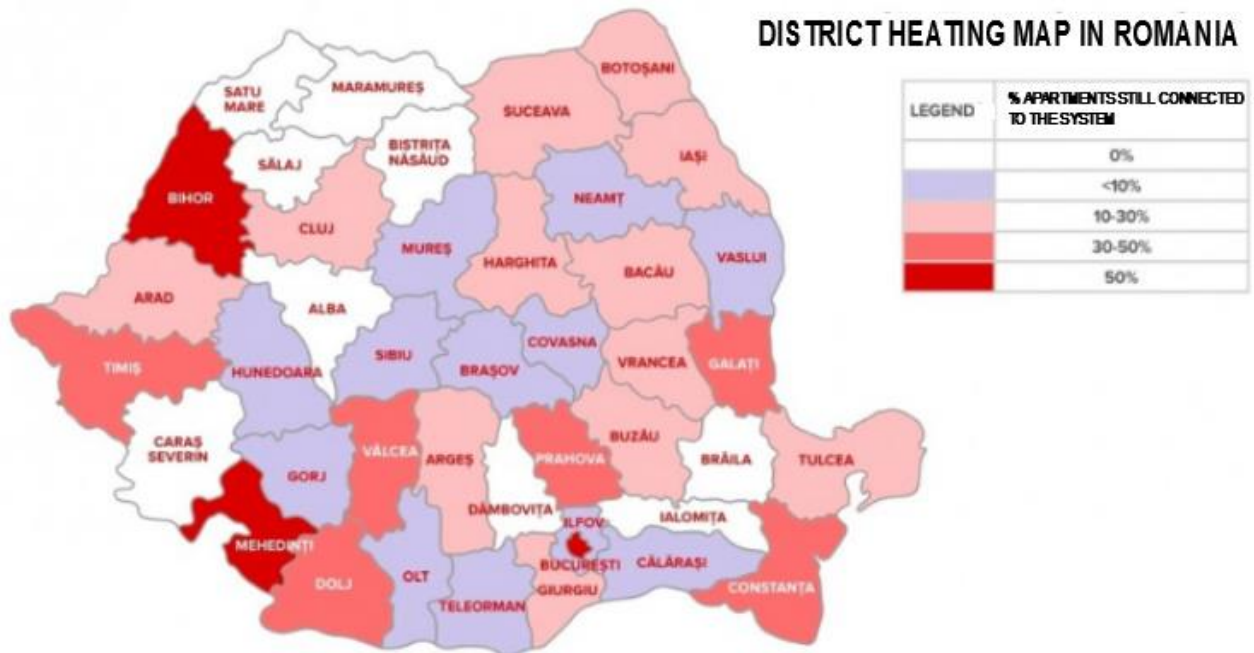


Figure 1. The map of the district heating system in Romania

2. Social impact of abandoned district heating plants in Romania

The problem of abandoned buildings is one that not only industrial building face, but any other function. Each abandonment has effects upon the value of a property, diminishing the value of adjacent occupied properties, upon public safety, public health or fire safety.[7]

More and more abandoned district heating points appear each year in Romanian cities, making the urban living area around them a dirty and dangerous place. Architect Ian Colquhoun studied the consequences that vacant industrial buildings have upon a community. Places that he calls „no man’s land” encourage vandalism and a perception of crime. The important issues that emerge here are the fear, the public’s lack of confidence in an area which leads people to search another place to live or work. Investors are also drawn back from such a neighborhood which affects their economic activities. As a result, the morale of residents is affected, generating a social isolation inside an urban matrix. No one wishes to go out and socialize in an area in which they don’t feel safe or even attracted to. [8]

All these problems can be observed in the case of abandoned heating plants that are near apartment buildings in many former communist districts in Romania. In Alba Iulia for example, an abandoned heating point near a playground represents an unhealthy place for children to come in contact with. Parents were afraid to let their children go out and play there.

Figure 2 and 3 presents the state of a neighborhood that was promoted in a local newspaper in order to make the authorities aware of the problems in order to solve them.



Figure 2. and Figure 3. An abandoned heating point in Alba Iulia city located near a playground

This was a story with an important impact because in 2016 the former heating point was converted into a social meeting place for parents and children. Here they gather for different activities such as dance lessons, painting, acting and music lessons. Also, parents receive counseling in order to overcome problems as divorce, unemployment, disease or the death of a family member. The community center provides a daily meal for children that come here on a regular basis. In figure 4 and 5 one can observe the new center and the differences between the old and the new.

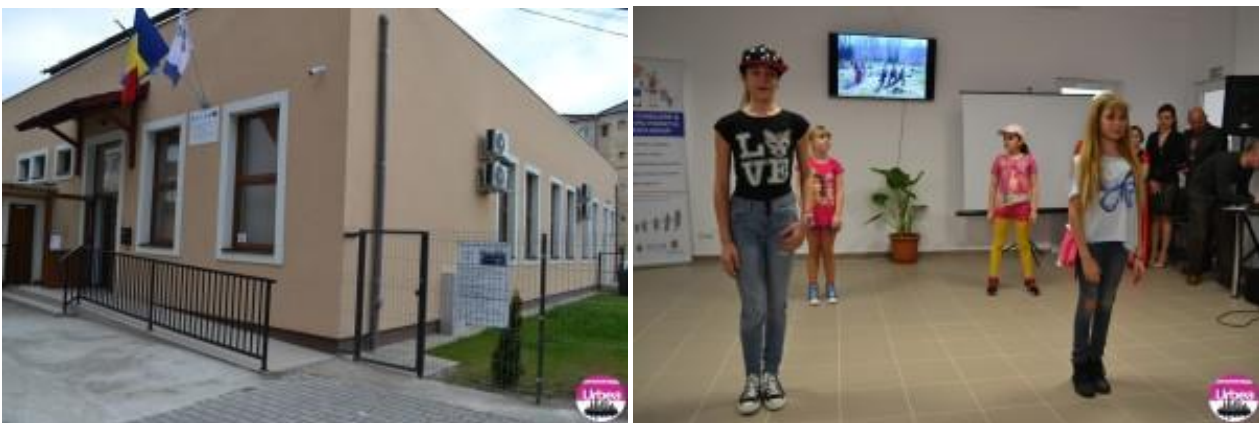


Figure 4. and Figure 5. An abandoned heating point in Alba Iulia city converted into a community center for parents and children

3. The typology of conversion of abandoned district heating points in Romania using the demolition criteria

Many times when we talk about an intervention upon a building by giving it a new function the decision of what stays and what disappears can be a difficult one. By analyzing the structure of the element, its structural role, its stability and its utility in the new proposal, a verdict can be given whether to keep it or not. Demolitions are very often required in a conversion project, and may be one of the most important issues when talking about an intervention upon an existing industrial building. This is the main reason why this aspect was chosen to be presented in the paper.

Types of demolition:

3.1. Demolition of the chimney:

When we think about a district heating point, the first image that comes into mind is its chimney or chimneys. The tall chimney can be considered the trademark of a heating point and can be observed from a distance of several blocks. In many cases the solution given by the architect when converting the building is to demolish the chimney because of its uselessness. Its former use was to eliminate the smoke created by the heating installation. There are cases when their structure is not considered safe enough and it has to go down in order to prevent any accidents. For example, in Vălenii de Munte city local communities and some owners of the buildings that served once as heating points requested the local authorities to demolish the high chimneys because of their uselessness. The structure, either made of concrete or brick was decided in May 2016 to be dismantled piece by piece in order to maintain the safety of the remaining building.[9]. An interesting case of demolition of the chimney can be observed in Alba Iulia city where a heating point was converted into a church.

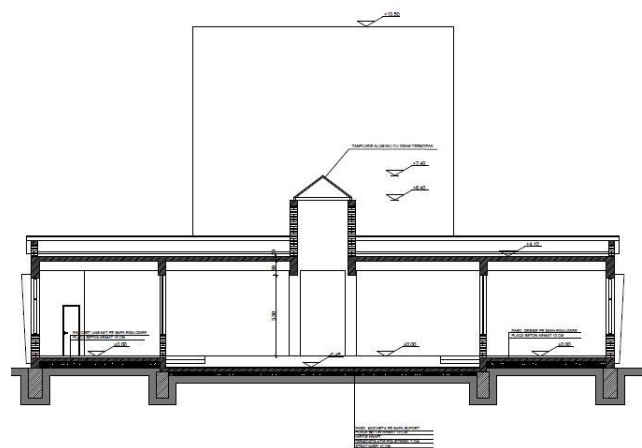
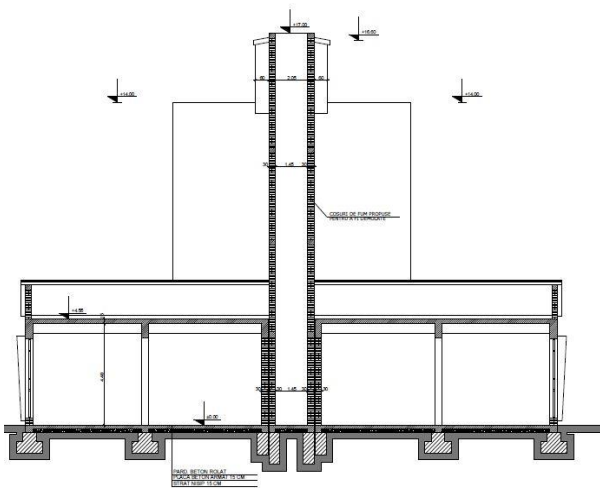


Figure 6. Former heating point–before-section

Figure 7. Church–after-section

Figure 6 presents a section through the heating point’s chimney and figure 7 a section made in the same place, after the conversion and it presents the new skylight proposed instead of the high and useless chimney. In this way the architect recalls the memory of the old into the new and uses a functional way of bringing light into the church.



Figure 8. Former heating point–before

Figure 9. Church–after

3.2. Vertical demolitions- slabs:

There are cases in which a staircase is needed in order to correctly connect the proposed new functions. In order to realize the stair, after a structural expertize, a portion of the slab must be demolished. This is a small intervention regarding the demolition part, but it is an important one for the utility of the new space. An example is shown in the figures below in which it is presented a section through a proposed stair that connects the ground story with the proposed story above. The initial heating point building situated in Sebeș city was a one story building, but the need to have more space for all the activities that a cultural center has, led to a vertical extension.

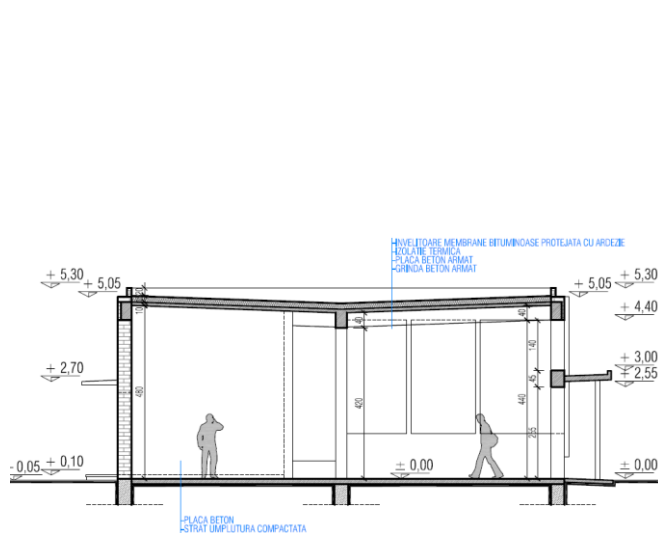


Figure 10. Former heating point-section- before

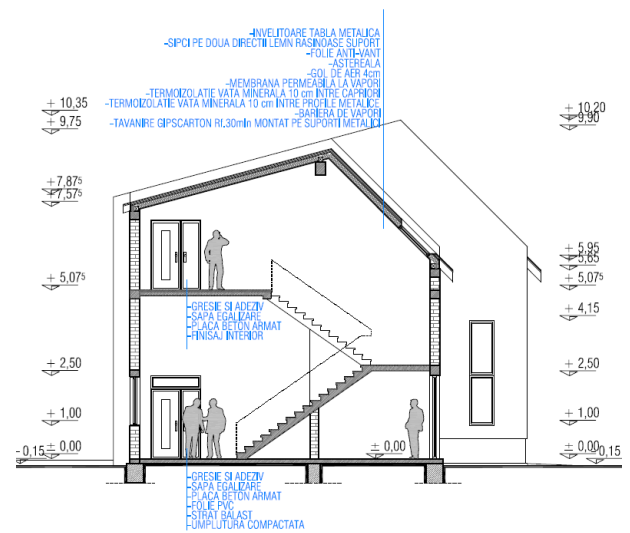


Figure 11. Church-section- after

3.3. Interior wall demolitions:

Each architectural program has its own needs in regard of space and functional compartmentation. This is why when converting a building, the aspect of demolishing some walls and building new ones is often brought into consideration. In Figure 9, the architect presents the interventions made upon the former heating point in Sebeș in order to sustain a new function- a cultural center called “House of the arts”. In yellow one can observe the walls that will be demolished, and in red the new proposed walls.

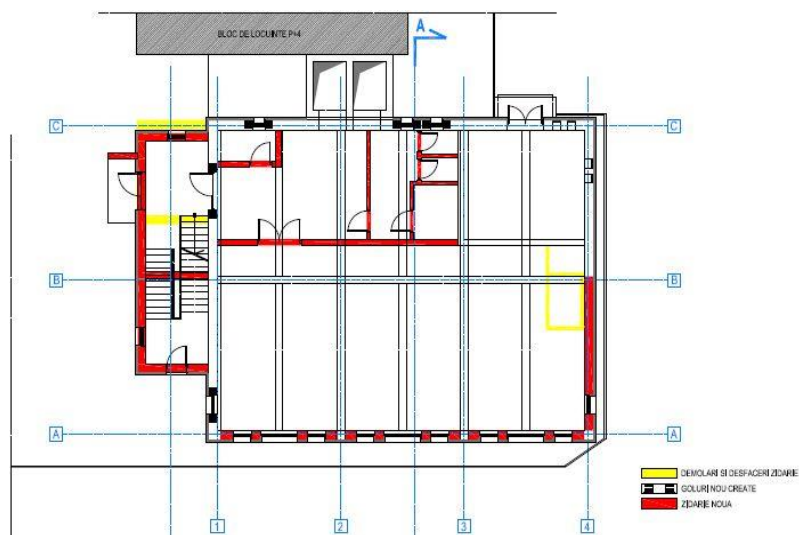


Figure 12. Intervention plan for the new cultural center in Sebes city

3.4. Exterior partial wall demolitions:

Many district heating points have big windows that provide enough light for daily activities. In some cases it is necessary to close them because of the amount of light that comes through, or because of the cost of the new windows needed. There are other projects, like the one presented in Figure 12 and Figure 13 below that need more light or ventilation to satisfy the needs of the new function – a care center for children in Alba Iulia. The yellow marks in Figure 13 represent new windows and doors proposed by local architect Marius Opruta.

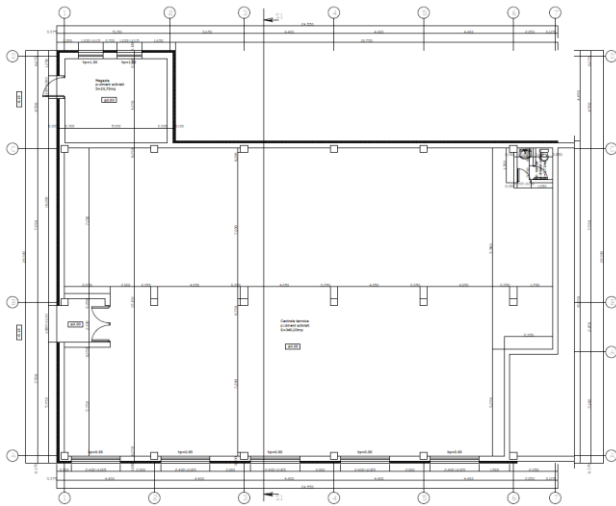


Figure 13. Former heating point– plan- before

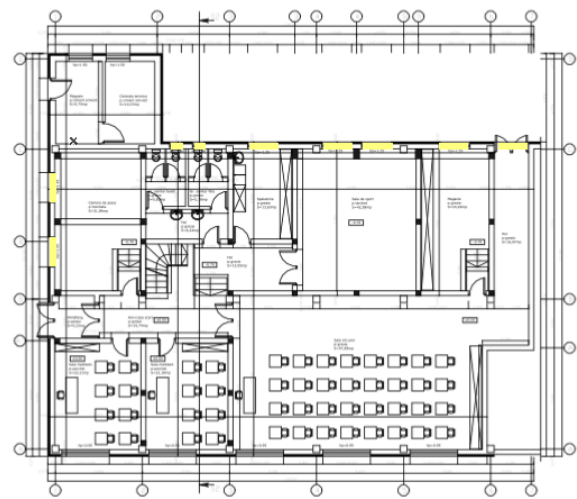


Figure 14. Care center for children–plan- after

3.5. Total demolition:

There are cases in which the structure of the building is not safe enough to be maintained and the costs of consolidating it are even higher than building a new one. An example can be observed in a former heating point in Cugir city. The owners wanted to keep the memory of the heating point and to transform it into their home but the structural engineer expert advised them to demolish it and to build on top of the clear site. The architects commissioned for the project proposed to maintain the footprint of the former heating point in order to at least keep its memory. This is how on the place of the old one story ruin building appeared a two story new home.



Figure 15. Former heating point–before



Figure 16. Former heating point–before



Figure 17. House–after

4. Conclusions

In Romania, because of the poor state of the infrastructure and the lack of investments in maintaining the district heating system competitive, people opted for an individual heating system for their homes after the 1990's. Without any further use, the abandoned district heating buildings started to degrade and slowly became a danger to the local community. Local authorities are more and more concerned about this problem and try to find solutions. One solution can be the modernization of the system in order to make it more competitive using the model from the Western European countries. This would solve the current problem of the individual heating systems used in each apartment which are a danger to the people if not used properly. Also, the Western European model of district heating is a more eco-friendly solution for the environment according to the report published by Euroheat & Power^[10] using different types of fuels: geothermal, nuclear heat, electric boilers, heat pumps, surplus energy.

The second solution found in several cities in Romania is the conversion of the former heating points into a new place that usually serves the local community. The conversion has a social impact upon locals not only because it helps clean up the zone but more because it provides a new place used for socializing. Cities in Romania have this problem: the lack of spaces with a social role near the apartment building built in the communist period. This article presents some examples of interventions upon the structure of the old buildings in order to make them more suitable for a new function. It does not encourage the closure or the demolition of the district heating points, but it presents alternatives for the use of an otherwise abandoned space. The purpose is to give some examples of what can be done with the old industrial heating points if the authorities do not intend to use them any longer to give heat to the apartment buildings. These interventions focus on the demolitions of different parts of the building. There can be small parts that are no longer useful, like the chimney or several interior non- structural walls or even the whole building if its structure no longer is considered to be safe.

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Fig.2 Gunoi și mirosuri înțepătoare într-o fostă centrală termică din mijlocul cartierului cetate, <http://alba24.ro/foto-gunoi-si-mirosuri-intepatoare-intr-o-fosta-centrala-termica-din-mijlocul-cartierului-cetate-proiect-lasat-la-sertar-din-2012-287134.html>, accessed on 11.02.2016

Fig.3 Gunoi și mirosuri înțepătoare într-o fostă centrală termică din mijlocul cartierului cetate, <http://alba24.ro/foto-gunoi-si-mirosuri-intepatoare-intr-o-fosta-centrala-termica-din-mijlocul-cartierului-cetate-proiect-lasat-la-sertar-din-2012-287134.html>, accessed on 11.02.2016

Fig.4 Inaugurarea centrului de consiliere și sprijin pentru părinți și copii Sfânta Maria din Alba Iulia, <http://urbeamea.ro/albaiulia/foto-video-inaugurarea-centrului-de-consiliere-si-sprijin-pentru-parinti-si-copii-sfanta-maria-din-alba-iulia/>, accessed on 8.08.2016

Fig.5 Inaugurarea centrului de consiliere și sprijin pentru părinți și copii Sfânta Maria din Alba Iulia, <http://urbeamea.ro/albaiulia/foto-video-inaugurarea-centrului-de-consiliere-si-sprijin-pentru-parinti-si-copii-sfanta-maria-din-alba-iulia/>, accessed on 8.08.2016

Fig.6 Image – section, courtesy of architect Marius Opruta

Fig.7 Image –section, courtesy of architect Marius Opruta

Fig.8 Photo, courtesy of architect Marius Opruta

Fig.9 Google drive image, public domain image, source: <https://www.google.ro/maps/@46.0711133,23.5597414,3a,75y,57.22h,98.74t/data=!3m6!1e1!3m4!1sZIJBIwol6ikhf0scn7DkRQ!2e0!7i13312!8i6656>, accessed on 8.08.2016

Fig.10 Section, courtesy of SC PROIECT ALBA SA, architect Silviu Sbera

Fig.11 Intervention plan, courtesy of SC PROIECT ALBA SA, architect Silviu Sbera

Fig.12 Intervention plan, courtesy of SC PROIECT ALBA SA, architect Silviu Sbera

Fig.13 Plan, courtesy of architect Marius Opruta

Fig.14 Plan, courtesy of architect Marius Opruta

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