Forward with Reverse Archaeology

On a New Method for Utilizing the Past in Spatial Planning

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Since the signing of the 1992 European Convention on the Protection of the Archaeological Heritage (Council of Europe) (henceforth the Valetta Convention), the Netherlands have been experimenting with the manner in which to implement its contents. The eventual choices that have been made came straight from an essential body of thought from the Valletta Convention: the archaeological record must be protected in situ as much as possible and should be an integrated and weighted part of spatial development (Willems, Kars, and Hallewas 1997). When the legislation (the revised Historic Buildings and Ancient Monuments Act [Wet op de Archeologische Monumentenzorg]) was finally enacted in 2007, archaeological sites became legislatively protected in zoning plans. Before a building permit is issued, archaeological research needs to be conducted. This integration of archaeology in spatial planning creates tension between the quality and quantity of archaeological academic research and spatial quality, which is strived for in the spatial planning and design process. This desire to improve spatial quality in the spatial planning process implies that archaeology, which is considered by law to be a condition in this spatial planning process, is to be one of the providers of that quality.

In the Netherlands, more than in other countries, archaeology is implemented commercially in a strongly and over-developed spatial planning system. The Dutch situation is described in this article, but it is presented here as a case study in order to show the manner in which larger issues in heritage management have been addressed that may lead to the benefit of both archaeology and other shareholding parties. It is argued here that the apparent incongruity in this system is beneficial for both spatial design and quality as well as for archaeology if the system is adjusted in a successful manner. The fact that archaeology is incorporated in the Spatial Planning Act has positive and negative effects for professionals. One of the drawbacks is that research conducted in a commercial playing field inevitably means making choices on what to focus on in research. The fact, for instance, that costs for archaeological research should necessarily be taken into account in the projects' exploitation costs means that the financial funds for research are not endless. This implies making democratic evaluations and choices concerning what (and what not) to excavate. However, making choices based solely on academic objectives is extremely difficult since, from an academic point of view, more knowledge can always be gained and is always desirable. Finding ways to optimize such decisions has been an important professional discussion for the past few decades. These discussions have been dominated by the wish to optimize the ethics of the archaeological professional, the quality of archaeological research, and the archaeological management process. This optimization was established by academic specialists before the Monument Act was implemented, in a series of quality standards, handbooks, and the formation of organizations within the field of archaeology to guard the quality of research. Since the implementation of the Valetta Convention, the

selection of what to excavate and research in the Netherlands has been made almost singly on grounds of potential academic knowledge values by archaeological professionals. A large number of research projects have been conducted since then. Only now, in the year of the evaluation of the Monument Act, do some academics dare to dispute the value of the larger part of these research reports for the academic field of archaeology. Almost four years after this system was put into effect, it has become clear that they system has overlooked a vital element in heritage management: the utilization of the knowledge that is retrieved from the soil in order to create the desired (spatial) quality in projects.

In short, until now, the Dutch selection criteria within the Spatial Planning Act have been instigated almost exclusively by the wish to produce more (academic) knowledge. The main driver for this has been the desire to optimize the quality of academic research and a certain "distrust" of commercialization of the archaeological field and the commodification of archaeological heritage. In the everyday practice of our Monument Act, a certain equilibrium is lacking between the production of knowledge and other needs in spatial planning, which may stimulate spatial quality. In this article we would like to suggest the need for equilibrium among three elements: (1) knowledge production, (2)the protection of archaeology in situ and guardianship of sources of knowledge; and (3) the utilization of that knowledge for other purposes. To find solutions and answers to these issues, a new method of archaeological research has been developed by The Missing Link:[1] Reverse Archaeology. The term, "reverse," is derived from reverse engineering, which was a popular management theory in the 1990s.

Archaeology in Theory: The Dutch Policy Framework

In order to understand the background in which Reverse Archaeology developed, the current state of affairs concerning heritage management in the Netherlands needs to be introduced. In 2007, the revised Historic Buildings and Ancient Monuments Act was adopted (Wet op de Archeologische Monumentenzorg 2007). The law is based on the principles of the Valletta Convention. Apart from the "polluter pays principle" (i.e. the developer is financially responsible) and the introduction of an archaeological commercial market, the main goal of this revision was to safeguard archaeological heritage by integrating it as one of the many conditions in spatial planning. The Netherlands has a long tradition of spatial planning and the regulation of spatial strategy, due to the lack of space, water management problems and the relatively strong position of the landowners in spatial development. According to the Netherlands Ministry of Housing, Spatial Planning and the Environment,

> the Netherlands is a small country that is continually changing in a globalizing world. Spatial policy has to respond to that situation. It is important to look to the future from the baseline of the past and present when developing plans for land usage. Spatial policy helps ensure strong cities and vibrant rural communities. Government policy must safeguard important national and international values like nature, landscape and cultural history and increase public safety while at the same time allowing "space for development" [2007].

To ensure archaeology as an integrated part of these developments, the Netherlands

have chosen their Spatial Planning Act as the medium for safeguarding their heritage. Archaeology should become a weighted and integrated part of spatial development. To ensure this, not only has the Historic Buildings and Ancient Monuments Act (1988) been revised, but also relevant sections of the national Spatial Planning Act. This ensures the incorporation of archaeology in the most suitable instrument: the local Physical Plans. Therefore the law prescribes two steps to be taken: (1) inventory making (i.e. what heritage is left?) and (2) a democratic decision-making on what to do with it as an integrated part of the spatial development (Goudswaard 2006).

In the Netherlands, on a local level, rules and conditions for spatial expansion are allocated to the so-called spatial plans or zoning plans. These plans are updated every ten years and are the instrument in "which decisions with legally binding consequences for the government and the public are brought together. These plans have two important functions—legal certainty and local development" (Goudswaard 2006). Archaeology is one of these binding conditions (along with, for instance, environmental issues like local pollution) that will need to be dealt with before any development can take place. Municipalities will need to develop legislation dealing with archaeological heritage at the same time. Thus, archaeology is legally safeguarded by using [local] physical plans as the basic instrument. The building permit includes the archaeological demands where necessary.

With this use of local instruments, there has been a shift in responsibilities. Local governments are responsible for the possible archaeological sites in their municipality. National monuments are still managed by the State Service. However, the new national laws (the Spatial Planning Act and the Historic Buildings and Ancient Monuments Act) have left the municipal council with much space to maneuver in creating local policy and practical policy instruments for the management of their local archeological heritage. It is important to stress that the law does not provide any guidance on priorities for archaeological research. This maneuvering space was explicitly given by the Minister and can generally be articulated in two planes: the dimensions of certain developments for which archaeological research needs to be conducted, and the research agenda for local archaeological heritage. In other words, a municipality can, to a certain extent, choose what historical periods they wish to focus on to serve their citizens and what volume of spatial developments will be researched. Such choices should of course be formalized in a policy document and follow a distinguishable and repeatable line of thought (for example, a municipality may in theory decide in a policy document that the Iron Age is not a desirable period for research in their territory because of the numerous Iron Age excavations that have already taken place over the past 20 years). These selection criteria should then discussed in a larger setting between the local and, for instance, the provincial government, before being integrated in local legislation.

Archaeology in Reality: Everyday Practice

Once archaeology has been inserted as a condition into local spatial plans, any developer working in a specific area should account for the possibilities of discovering archaeological sites. As stated before, the concept behind this method is to embed archaeological remains in the planning process and to make it a weighted part of spatial development. A

survey carried out by The Missing Link in the context of the evaluation of the law's implementation among members of the main developers associations, however, painted a different picture. The conclusions could contain ingredients for a new and different context for decision making (Goudswaard and Hornix 2011). For example, it appears that developers consider heritage management to be their responsibility, but they would like to have a say in the process, the goals, and the utilization of that data. They feel that they have deliberately been set aside from the decision-making. Therefore, the research reveals that project developers do not consider archaeology as a spatial factor, but rather as one of the environmental factors that need to be cleaned up before construction work can begin. The report on archaeological research is regarded as a necessary stack of papers to file in order to obtain a building permit. The reason for this could be twofold. On one hand, the archaeologists are not interested in the core business of spatial developers: making inspiring space with the aid of a historic background. They do not inspire developers with examples of the utilization of archaeological heritage. This leads to an indifference from the developer who is not willing to pay for a product he cannot use. The added value of archaeological research is rarely recognized; sometimes a developer will call a local newspaper to publish short articles about new findings during excavation, but in general most developers do not look upon archaeology as a site-specific "extra." This is also due to the unfamiliarity most developers feel toward archaeology. Discussions on the need for further research and the demands on that research take place among archaeologists, and the developer is often simply informed of the outcome instead of actively asked to partake in the discussion.

In short, archaeology is regarded as one of the many things on the developers' "to do list."

The municipalities, who draw up physical plans, do not incorporate archaeology as a defining factor, but rather as another layer on their map that just needs to be there, mainly to meet legislative demands. There is no true strategy envisaged with the incorporation of archaeology in physical plans. Archaeology is rarely used when it comes to image plans, whereas it is exactly these plans that form the basis for future developments in a municipality and where heritage can play a vital role: where will we focus on our natural resources such as green plants and water? Which areas are most suitable for new building projects? In which regions should we stimulate industry or farming? These questions could also involve local heritage: which heritage do we want to strengthen, which old structures such as dykes, canals, or roads define our current landscape and could play an equally defining role in new developments? In addition, the project developers interviewed during the survey indicated that even within one municipality, archaeology and spatial planning do not seem to be integrated on even a very basic level: officials working on the same plan from different disciplines often do not seem to be in contact with each other, leading to confusing directions issued by the same authority. The maneuvering space for municipalities as presented above is left virtually unused. Research agendas are limited to filling archaeological knowledge gaps only, and as a result they carry little or no weight for disciplines such as city marketing, recreational policy or perhaps even economical goals a municipality might have.

Archaeological heritage is not yet the weighted part of spatial planning that the

Valletta Convention envisaged it to be. It tends to be considered as a handy protocol for planners and developers to follow that does not add anything to their own core-business: creating inspiring space.

Heritage management in the Dutch system is organized on a national and local scale by different laws and legislation on spatial development (Willems, Kars, and Hallewas 1997). This implies that archaeology and other aspects of heritage are very much linked to spatial development (and thus also to the physical remains of heritage) and the manner in which space is designed and filled (Roode 2008). It also implies that the protection and the destruction of heritage is a matter of specialists in the realm of spatial development or archaeology and less a matter for the public or wider range of shareholders not involved in development. Heritage management in the Netherlands is organized top-down, focusing primarily on spatial development and embedded in legislation that is imposed upon inhabitants and developers alike. The cultural sector occasionally has an influx of information to disseminate to the public, but apart from museums, very little use is made by other fields of the results of archaeological or heritage research (Ashworth and Howard 1999). It is our conclusion that this is a direct consequence of the fact that archaeological law is embedded in the long Dutch tradition of spatial planning and strategy. Physical plans have very little visionary effect on planning strategies; they are used mostly as a checklist for issuing building permits (Berg and Hurk 2011). As a consequence, archaeology (also embedded in physical plans) is not used as a steering instrument in development either. The law did provide for this, but the implementation and way in which this is carried out in practice has shown otherwise.

Value-based Heritage Management

Sustainable archaeological heritage management is best designed bottom-up (Clark 2001; Cleere 1989; Smith 2008; Smith et al 2010). Ensuring that remains are evaluated by all shareholders involved is necessary to enable the heritage professional to make well-founded choices (Marchetti and Thuesen 2008). In Reverse Archaeology, these choices eventually determine the division of costs for archaeology into three aspects: what costs should be used for research; what should be invested in preserving remains in situ; and what should be allocated for presenting the results to the public? This type of value-based heritage management was convincingly argued by several authors in the outcome of a research project by the Getty Conservation Institute (Teutonico 2002; Torre 2002). Many evaluation systems of archaeological heritage have been developed worldwide and they are used as the basis of heritage policies on different national and international scales. The perspectives of these systems vary considerably of course (Torre 2002) and there is no unbiased classification available by which heritage may be evaluated. The classifications are usually determined by the management objective of the organization or field of expertise designing it. This is an important consideration in the light of the Dutch system. Here too, until recently, only the experts in archaeology were considered responsible for making those decisions (Bazelmans 2006; Deeben 1999).

This leads to the main question: who in the decision-making process of archaeological heritage decides what is important (Groot et al. 2005; Schofield 2008)? Naturally, the question above could be answered by any scholar in the field of archaeology. Most likely, the answer will be that the encountered remains are important for a certain

type of research. In order to objectify this importance, the Reverse Archaeology model has developed an intricate system in which values are accorded, based on different levels of knowledge, linking these to local carriers of significance. Assigning the values of the archaeological heritage is an interdisciplinary matter in which different shareholders play an equal part. In essence this is not new and has been advocated in value-based management approaches worldwide. However, combined with an elaborate system of spatial planning like the one existing in the Netherlands, it does become a new or enriched approach. In the Netherlands, the democratic place archaeological research has taken up over the past few years did not result in a successful integration of heritage in spatial planning and quality improvement. The system therefore needed a new approach.

A New Method: Reverse Archaeology

The Missing Link has developed a new management method to overcome some of the mentioned issues in the paragraphs above. The method was named Reverse Archaeology in 2009. The aim of this method is to use the past to create a meaningful future. A continuous discussion with project managers, the local government, the foreseen end users, and experts on local history is pivotal to the success of establishing what is important and could be used to add value to the project.

The method of Reverse Archaeology enforces explicit decision making on two issues: (1) goals and applications of research and (2) stakeholders involved in the decision-making. The term, reverse, evolves from the fact that the two issues are to be dealt with before the process has started. In essence, this method is not new and may be seen as fitting within the realm of value-based heritage management. This Dutch method of Reverse Archaeology tries to bridge the gap between both systems (Bos and Roode 2009; Goudswaard et al. 2010). On the one hand, we use the benefits of the Dutch spatial strategies to embed the protection of sites and ensure that research is executed in spatial developments. On the other hand, Reverse Archaeology will ensure the participation of all stakeholders and the use of the results of research in expert fields other than spatial development such as economics, culture, recreation and tourism, education, and social cohesion. This not only broadens the choices available and appreciation of heritage management, it also ensures a more sustainable base for the protection of this heritage. In the following paragraphs we will explore the Reverse Archaeology method in more detail. Yet, in the previously described context of the Dutch system, this method is different. The strict regulation of the archaeological process within the spatial planning process in the Netherlands might prove to be a suitable instrument to actually implement the outcome of this method. Each stakeholder already has a defined role in the spatial planning process: the financial and operational responsibility for heritage management is held by the developer, while the final decision making is the responsibility of the municipal government. The end-users have the power of vote in any new plan. As a consequence, archaeology has entered the realm of democracy and the market and is fiercely in search of direct social relevance. This may be seen as the most significant change in the profession of archaeology. Since the first interest in the human past arose, the study of this past has largely been the territory of professionals in their field. Based on expert judgment, decisions were made as to the significance of sites and finds. Now, with archaeology being just one

of the many factors in spatial planning, these decisions have to be made by a larger public. The main question at hand is: who decides what is important? Obviously, science itself is one of the factors. Universities and academics should therefore definitely have a contribution to the answer. In addition, with the introduction of commercial archaeology into democracy and spatial planning, the organization that bears the cost of the research is entitled to decide where it is investing in as well. The local government has a say in the matter, as it is ultimately responsible for heritage management. And what to think of a fourth group, the everyday users of a development project? For example, what do the many travelers on a certain railway trajectory see, learn, or experience when they encounter all these investments in the past that were done when the railway was built?

Reverse Archaeology and the Shareholders System

Reverse Archaeology focuses on a continuous discussion among the four main recognized shareholders in the Dutch system: the heritage experts, the present or future users of the development project, the heritage authorities, and the developer. In the Netherlands no communities involved with a specific kind of heritage are known, at least not as strong as for instance in Australia and the United States. Only by making joint decisions will stakeholders take responsibility and participate. This discussion is pivotal to the success of establishing what is and what is not important. The result is a predefined ambition with which the shareholders may address strategic choices on the preservation of heritage. These choices are made in order to strengthen the identity of a place and be an added value to development.

The Reverse Archaeology process is very much comparable with other systems already used worldwide in heritage management, but the empowerment of more than the archaeological expert in the decision making process is essentially new in the Netherlands. Besides, the method differs in a number of ways with other management systems. For instance, with the integration of archaeology into the Dutch spatial development system and its legislative protection in the zoning plans, a different and more public outcome was required for archaeological research: a condition contributing to spatial quality. Apart from that, with the place of commercial archaeology in this spatial planning system, the decision making process was decentralized and essentially placed into the hands of municipalities, and thus with the representatives of the public. Unfortunately, it took until now to realize that moving archaeology away from the sectored approach needed the development of shareholders and a more integrated model for the evaluation and use of archaeological heritage in different spatial plans, as well as different legislative policy sectors (McKercher and Cros 2002). This evaluation process that was developed is painstaking and should be directed by an expert in the management of this kind of psychological process. It requires bringing together all parties involved and finding a way to mobilize the end-user or future users of the heritage. This is one of the most difficult aspects of Reverse Archaeology and may be done in as many different manners as there are different participants involved. Different groups of shareholders should be targeted differently (Duineveld 2006). This may be done by shareholder meetings on the heritage location, questionnaires sent through the Internet, local newspaper articles, or the use of representatives of future inhabitants of a town area. Often choices made

in this process are in direct conflict with each other. In general the four shareholder parties may be grouped into private parties (e.g. the developer of a location and the user of heritage) and the non-commercial parties (e.g. the heritage authority and the heritage specialist) involved. Each of these parties has its own preferences and point of view. The project developer is mostly interested in cost efficiency in the process of development. The user is mostly interested in the creation of an inspiring space. Since the developer benefits from the attractiveness of a location, creating inspiring space is also the overlying ambition of this party. In the Netherlands, most developing parties were also involved in the development of Reverse Archaeology and the sustainable elements of the method were greatly recognized by most. The authorities are by nature of the law interested in preserving as much of the heritage (preferably in situ) as possible to stimulate the identity of a location or municipality. The heritage specialist is mostly interested in the research that can be undertaken in situ in order to fill lacunae in both national and regional knowledge, thus generating knowledge and of course also the protection of sites in situ. For the first time after the implementation of the Historic Buildings and Ancient Monuments Act, the method of Reverse Archaeology strives to achieve a successful symbiosis between archaeological research at universities and this form of commercial archaeology. For the first time, the shareholding parties are mobilized and brought together at the discussion table where they are involved in a dialog with the objective of achieving a consensus on heritage management. Since there are different ways to approach the subject, either based on value of the heritage, the ambition of the development, or the finances of the plan, with the use of a different focal point a stranded discussion may be loosened again.

If archaeology is implemented into spatial planning with the need to develop spatial quality in area development, it is desirable that archaeological research should add to that quality in more ways than the creation of knowledge alone. Archaeology should then at least address the three elements that make up spatial quality: use value, future value, and experiential value (Dauvellier et al. 2008). Then also choices in the spatial planning archaeology should be instigated by more than knowledge value alone, but also by the above mentioned values. These additional values imply that other stakeholders should be heard at the decision making table. In many other countries a similar kind of value-based heritage management has already been implemented,not because the field has gone through the specific development the Dutch system has gone through, but rather because sometimes the lack of such a highly structured legislation has stimulated the need for creating a more common ground for heritage.

Back to the Future

When the common goals and objects of archaeological research have been defined using the Reverse Archaeology method, the question arises as to how its outcomes may be used to create a meaningful future. To examine this thought further, we first analyze the methods of using the past as they are generally employed in the Netherlands.

In the traditional research model, archaeological remains and the history of a certain location are uncovered relatively late in the planning process. When they have been encountered, they are studied from a purely scientific point of view. In addition, during a project there is rarely a budget planned

to enable communication of the site's specific history. As a result, it is often too late to change the design of the research or use the full potential of its outcome, and the story is told within the traditional context of temporary exhibits and leaflets. In larger projects, a greater budget is sometimes granted to create a visualization of the remains. Nonetheless, the history of a place is rarely taken into account from the beginning. All too often, the results of the archaeological research turn out to be more interesting than previously considered, resulting in last-minute changes like street names, floor plan visualization in the pavement, or archaeologically themed children's playgrounds (Bos 2007). Obviously, there is nothing wrong with these interpretations and uses of the past!

However, in our view, relaying the unique story of a specific location can be done on deeper levels than in the traditional way (Pine and Gilmore 2007). We aim to take the process one step further. Whereas traditional storytellers translate the excavated remains into a reconstruction. We would like to take the remains and reconstruction and connect these to the site's future use. When the process of Reverse Archaeology has been carried out, the archaeological research goal is connected to the goal of the project itself from the very beginning. For example, when a new shopping mall is being developed, the archaeological research might focus on trade and economy. When a new housing block is envisaged, the archaeological research could focus on earlier inhabitants and their way of life. This could even be made more specific according to the sort of population the new housing is being developed for: will it accommodate the elderly, or is it designed to be an area for families with young children? In the southern part of the Netherlands, currently on the drawing board is a plan for the "Road of the Future" (Atelier Rijksbouwmeester 2007; Berg 2009). Here, archaeology is used as an inspiration for design. When developing a new layer, the information contained in the hidden, older layers can be worth passing on to a new generation. The selection of layers or periods to research could depend on the degree of usage in the new layer.

Methods that may be used to achieve these goals include storytelling, Imagineering, and other means to attract visitors and users in a different way (Nijs and Peters 2002). This can only be done after careful consideration of motives of user groups and the outcome and manners of presenting the heritage of a place to the public is adjusted to their demands (Bos et al. 2010; Ennen and Fonds 2010). This is only possible when we include other specialists in the fields of communication, marketing, art, architecture, and design and establish a real dialog with them. When archaeological research is approached from not only a scientific angle, but also from the point of view of the new development, the past can transcend the function of window-dressing and redefine itself in its true form: the identity of a place in the past, present, and future.

Reverse Archaeology in Practice

Because of the duration of the Dutch spatial planning process, as well as the relatively recent inception of Reverse Archaeology, there are, as of yet, no projects that have been "reversed" from start to finish. Regardless, The Missing Link has been experimenting with the implementation of Reverse Archaeology in multiple projects at different stages.

An example is a recent development in the town of Wijk bij Duurstede, situated in the center of The Netherlands. Here, on the remains of the famous medieval trading settlement of Dorestad, is the site for a joint

venture between a project developer and the municipality to build a school and housing units. The necessity of archaeological research was clear from the beginning. The long and rich history of Dorestad required clear choices to be made in what to research beforehand in order to mitigate or wholly prevent overextension of the budget. The same history of course also lends itself very well to the enrichment of spatial development. With this in mind, Reverse Archaeology was used to mold the research design document—essentially the demands set to archaeological research in a Dutch spatial planning process—into something that went beyond academic questions. The archaeological contractor was challenged to provide input for the quality of the space based on the research results: e.g. colors, textures, photographs, and stories. Likewise, the developer and the municipality brought in "community questions" that were focused on the desired heritage profile of the area under development to supplement the academic ones; the majority of the attention was directed towards archaeological periods that had not featured much in previous Dorestad research.

Another example of the implementation of Reverse Archaeology is the redevelopment of the former Valkenburg airfield, near Katwijk on the northwestern Dutch seaboard. The developer consulted The Missing Link early on in the planning process; the inventorying archaeological fieldwork had just started and the master plan for the redevelopment was essentially a clean slate. The challenge here was to find a balance between the intensity of archaeological research and its value for the quality of future spatial arrangements whilst keeping a tight budget and preventing archaeological remains in situ from having too large a claim on the area suitable for new housing.

The answer began with a thorough risk- and chance-analysis of the (possible) heritage in the area, which had been an airfield before World War II and the outskirts of a Roman settlement long before that. Second, a set of heritage-inspired themes were formulated based on such analysis, ranging from prehistoric landscape dynamics to the impact of the German occupation during the war. These themes would fuel the master plan for the redevelopment, thus establishing heritage as a means to achieve unique spatial quality.

Other notable examples of the burgeoning use of Reverse Archaeology in Dutch spatial development are: (1) the archaeological "ruler," a set of predefined choices against which the necessity of archaeological research is measured; (2) the heritage utilization analysis, in which heritage potency is coupled with translation in spatial development based on target groups; and (3) the inspiration session, in which as many stakeholders in the spatial development as possible come together to brainstorm about the use of heritage in their common project. The novelty of these products and services is found in the timing of their integration in that lengthy planning process: as soon as possible instead of at the end of the line.

A taste of what implementation of heritage can achieve in spatial planning is the case of Schuytgraaf, a plan of over 6000 houses in an extension of Arnhem, a city in the east of The Netherlands. Here, archaeological investigation revealed eleven archaeological sites, mainly remains from the Roman period and the Middle Ages, but also from the Battle of Arnhem, which was fought in World War II. "Site 10," however, bore remarkable traces from the Stone Age, dating back some 7,000 years. Site 10 is now a national archaeological monument. Any activity that may damage the site is prohibited.

Although it was being set up before the advent of Reverse Archaeology proper, The Missing Link nonetheless operated in spirit when a design competition was held: four design bureaus were challenged to come up with a plan for using Site 10. The guiding principle in this process was that the design would earn itself back over time. It was precisely this guiding principle that made the process stand out from other spatial plans in which cultural values are integrated into the design. The winning design by CHORA, "The Landing," has two archaeological identities: that of the earth and that of the air. The plan consists of four layers, taking into account the future users. The bottom layer takes the shape of a variety of planted beds and texts explaining the archaeological treasures hidden under the ground surface that have been set into the railings. The story of operation Market Garden, the landing of the Polish parachutists in World War II, has been visualized by means of the parachutes, which also serve as a pavilion. The pavilions transport the past into the here and now, focusing on play, recreation, and meetings for future users.

The implementation of Reverse Archaeology in Dutch spatial planning has only just begun. In the coming months and years many more projects in which The Missing Link is involved will see "reversed" products and lines of thought. The ultimate goal is to establish Reverse Archaeology as the premier way to reconcile archaeological research with spatial development in order to achieve a spatial quality that is more than the sum of the parts and which uses heritage as fuel for inspiration.

Problems and risks

As with any new management method, Reverse Archaeology also has to overcome problems and risks.

Integrating archaeology into spatial planning legislation has serious consequences, which are especially felt in this time of economical crisis in its effect on budgets. What are the costs involved with carrying out archaeological research previous to infrastructural or building works? And how can these costs be balanced against other municipal duties or other building costs such as contracting, material costs, legislative fees, etc.?

The responsibility for covering these costs is twofold: the costs of civil servants are paid for by the municipality and covered through taxes. The costs of carrying out the actual research is primarily the responsibility of the private party that has instigated the work. The fear of making extra costs poses a challenge for Reverse Archaeology in so far that developers first have to be convinced of the method paying out in a later stage. Initially, the costs for archaeological research may seem higher as they are made earlier in the process. In the end however, the results of the research will prove to be of use in, for example, the increased sales rate of a project and lower costs on marketing budgets. The most important cost benefit of Reverse Archaeology is the fact that by defining the heritage ambition in advance, managing what to research, and how to use it in the development will be more cost effective and easily manageable. By investing at the beginning in bringing together different shareholders, the return is larger in a later stage.

We would also like to argue here that commercial archaeology and academic archaeology need to each develop their own financing system and with it their own working method and specific playing field. Both fields of archaeological research (academic and commercial) have almost been seen as one and the same over the past years,

while they may each serve different purposes. Commercial archaeology may document the presence of archaeological heritage, making it usable for spatial development possibly by a new series of heritage products that still need to be developed. Academic research in archaeology would do good to develop research methods and the production of more in-depth knowledge of our past. This is very necessary and may be seen as a basic need for the professionalization of our field and the Dutch system of commercial archaeology.

There is also criticism of this method in the Netherlands. Bazelmans (2009) argues that attributing value to archaeology can only be done by archaeologists and should never be left to the democracy. In his point of view (Bazelmans 2009:56–57) this goes back to the old Dutch principle that the "state" should not mingle with "ärt." In our point of view, however, heritage management is part of the spatial development and therefore automatically part of integral decision making. The law provides a two-staged model for this: first, the professional judgment and second, the integrated political decision.

This democratic process can ultimately have far-reaching consequences. This is exemplified by a Dutch case where research results were rejected because they did not fit the religious agenda of local politicians. However, this is just one example. One can argue that this is the consequence of democratic decision-making. We would also stress that archaeology, but moreover archaeological heritage management, is not a matter of "art" but a matter of policy and administration. If the "wrong" decision is made, then professional archaeologists clearly have to do a better job in advising democratic society as to what they consider to be the "right" decision.

We would like to stress that the Reverse Archaeology method needs all four parties, i.e. science, government, initiator, and user, involved in equal parts in a democratic system. Attributing value only to scientific arguments has proven to miss the point of integrating archaeology as a true spatial factor; leaving out science entirely and focusing only on shorter term interests of inhabitants and politics will prove to be even more destructive.

In Conclusion: The Broader Implications of Reverse Archaeology

In this article we have tried to argue for a new method for utilizing the archaeological past and a new method of Dutch heritage management. It resembles other worldwide value-based heritage management methods, but differs in the sense that this archaeological method is implemented entirely in a spatial development system and is in essence not, as for instance advocated by other systems, mainly designed to conserve and protect archaeological remains. Because the spatial plans used in the Netherlands are not used as the space-inspiring and developing instruments they were meant to be, but rather as an instrument to check whether building permits may be issued, the parties involved are turning towards other instruments and processes to create spatial characterer (Berg and Hurk 2011).

We have tried to show the difficulties this system has had over the past ten years. However, one of the main reasons was also to show the benefits of this particular Dutch legislative system. The field of archaeology may benefit from the spatial planning act and the spin-off this has created. In many countries (spatial) planning or area development is still a substantial economic power, and archaeology and research may in the future still benefit greatly from this driving force. However, this may only be done if archaeological research does not merely imply excessive costs and planning

problems. It requires different, well-balanced financial systems where practical use and development of the scientific methodologies should inform each other. This positive effect can only be established when archaeology also provides a certain return on investment to a developing party (Bade and Smid 2009; Belvedere 2005). This return on investment is best shown by placing the results of archaeological research in the service of other spatial or planning objectives. In this process archaeology is no longer leading or led by academic questions, but becomes a means to come to a result in a better founded and established manner.

This means that the desired result (for instance, an area designed to attract mostly young urban target groups) should be known before archaeological research is designed and that this desired result should lead the decisions in archaeological research. Often the end user will therefore need to be heard or at least known at the decision making table when decisions are made on the selection of topics or archaeological themes for archaeological research. We are not arguing here that archaeological research should not be conducted with a focus on quality, but rather that when inevitably choices need to be made, they are made more easily with the desired end result in mind, and that money will be more easily given out by a project developer when his desired result is emphasized by the research.

In 2011 the Monument Act will be evaluated. The way in which archaeological research is defined in the Netherlands will be discussed in this evaluation process. Reverse Archaeology was already mentioned by the organization carrying out the evaluation for the Ministry as a means to integrate heritage and spatial planning. It may be expected that the active involvement of shareholders will prove to be an important element of the evaluation.

It is essential to realize that the Monument Act was not made for archaeologists only. It was meant to enable the use of historic knowledge that is produced by specialists. It was meant to make it visible and to experience it so that it can be passed on to next generations. With Reverse Archaeology, we aim to do just that. In words of the Spanish writer Louis Aragon, "I've made up the past again to see the beauty of the future."

Notes

1. The Missing link is a consultancy company on heritage management in The Netherlands, Woerden; http://www.the-missinglink.nl.

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