

Problems and Solutions Within Large Scale Preventive/Rescue Excavations Before and After 1990: The Case of Saxony

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Abstract

In Saxony, archaeological excavations accompanying large-scale development-led projects are always planned and conducted a long time before lignite extraction, gravel mining or the construction of motorways or pipelines begins. We do not distinguish these rescue or preventive excavations from research projects, either in terms of their methods of approach or in the way they are conducted. As all projects are carried out by the state heritage office, there is a standardised model for excavation, documentation and reporting. This may be the reason why economic crisis only conditions the number of preventive/rescue excavations, while the quality of performance remains unaffected. As we are keen to be a reliable partner for planning enterprises, we can rely on political understanding. Heritage law is good and, in some respects, open to interpretation, so the practice of 'polluter-pays' excavations is very much dependent on individual conduct and on a personal commitment to rescue information about archaeological monuments before they are destroyed.

Keywords: rescue/preventive excavation; standardized documentation; archaeological state office; heritage law; personal commitment;

Zusammenfassung

In Sachsen erfolgen alle denkmalpflegerisch bedingten Ausgrabungen im Rahmen von Großprojekten rechtzeitig vor dem Beginn der entsprechenden Bau- oder Abbaumaßnahmen. Deshalb gibt es keine grundsätzlichen methodischen oder qualitativen Unterschiede zwischen dieser Art von Rettungsgrabungen und wissenschaftlichen Ausgrabungen. Alle Projekte werden durch das Landesamt für Archäologie organisiert und in einem einheitlichen Verfahren untersucht und dokumentiert. Aufgrund dessen kann die ökonomische Krise lediglich einen Einfluss auf die Quantität und nicht auf die Qualität der denkmalpflegerisch bedingten, großen Grabungsprojekte haben. Als verlässlicher Partner für die Verursacher erfährt das Landesamt in der Regel Unterstützung von politischer und wirtschaftlicher Seite. Die Gesetzesgrundlage ist gut, aber auch offen für Auslegungen, so dass die Durchführung solcher Großprojekte in großem

Maße auch vom persönlichen Einsatz abhängt und von der Einstellung der Beteiligten gegenüber solchen archäologischen Denkmälern, die ansonsten unbeobachtet zerstört werden würden.

Introduction

This paper examines the practice of preventive and rescue archaeology in Saxony, a small region of Germany that was formerly part of the German Democratic Republic. It will look at how we deal with large-scale projects, mainly open-cast mining and linear projects such as motorway and pipeline archaeology. The special feature typical to all these projects, in addition to the large areas they affect, is that they deal with cases that are unavoidable, i.e. where there is no further possibility of preventing archaeological monuments from being destroyed. I therefore refer to them as excavations conducted with the intention of ‘rescuing’ archaeological monuments by documentation. Rescue archaeology might (but does not have to) refer to situations in which archaeologists are summoned after the destruction has already begun, but it also includes planned and well-prepared excavations, as is the case with large-scale projects. In this sense, this denomination does not imply any information about the length of time or the intensity of preparatory work prior to the excavation itself.

I am therefore not drawing any distinction between preventive and rescue archaeology; together with other synonymous terms such as costs-by-cause archaeology, they include all the diverse ways of coping with the necessity of building or mining in new areas. However, we will have to distinguish these kinds of excavation project from those that are termed ‘research’ excavations, even if there should not be any difference concerning their aim and content. Preventive/rescue excavations and those planned only for reasons of scientific research share a common aim, but employ a different methodological approach. As the general strategy of research excavations is to seek out the best places for positioning relative small excavation areas, there are a vast number of ‘soft’ prospection methods, including the study of all data that is available in advance and that is used to find out where the ‘best’ places for the mostly short-term research excavations might be. The possible circular arguments connected with these approaches is, of course, well-known and has often been proved: for example, if we are just looking for a certain prehistoric settlement only where we expect to find it or where we already know it to be located, we can only confirm or disprove this expectation, but we would never find settlements in untypical places. Maybe future research will find out that a former untypical behaviour becomes typical, like for example the distribution of early Neolithic settlements we nowadays also find far from the margins of rivers (Stäuble 2012: 19–21). We should therefore not only be grateful

for all casual information gathered by excavating all the areas where building or mining projects take place, but should also strive to practise preventive/rescue excavation systematically in all areas of inevitable soil intrusion.

The main difference between research excavations and preventive/rescue excavations is therefore between targeted research (the former) and stochastic research (the latter). From this point of view, financing institutions will always expect, if not demand, positive results for targeted research excavations, whereas the culture, period of time or type of feature to be saved by excavation and documentation should not make any difference to preventive/rescue excavations. I will mainly restrict my paper to this point. Again, this is not about those projects that can be avoided, nor is it about publication or any other popular presentation of the results; it is only about what we can do best for this neither first nor last, this small but essential part of the 'chaîne opératoire' of preventive/rescue archaeology. If this functions well, we can also confront the other necessary and important steps.

Of course, there are many other organisational differences and constraints: the number of excavators, their skill and experience, the time available (and even the time available with respect to the weather), the technical equipment, etc. Nevertheless, there is no doubt that there is (or at least should be) *by definition* a difference in the level of professionalism, with all its advantages and disadvantages. In any case, this is less a systemic problem and more an individual one, where the differences in quality depend on the personal commitment of everyone involved, regardless of the different constraints characteristic of the respective approaches.

It does not come as a surprise if research excavations account for less than 5% of the total number and excavated areas. This must not necessarily be a bad development and it would surely be no problem if there were no differences in practice, i.e. if one did not regard preventive/rescue archaeology as being less valuable than research archaeology. At the same time, cooperation between institutions (universities, academies, museums, heritage management offices and professional enterprises) to combine excavations occasioned by building or extraction projects with targeted research could always be improved. It is therefore not really a matter of whether we are dealing with the costs-by-cause principle of rescue excavation or an academic excavation, be it a training excavation for students, a research excavation or, as is often the case, a combination of the two, as the archaeological methods are entirely and always the same. It is obvious that we use (or should always use) the best methods dictated by the aim, but whether we use more traditional or very modern methods is not so much a matter of big money as that of personal attitude.

As far as the discussion regarding the differences between excavations conducted by companies and those conducted by state heritage offices is concerned, we simply acknowledge the different approaches and can finally judge their value only by the

quality of what is to be done at all stages of the work. Alongside the issues of excavation costs, the necessity of turning a profit and the earnings of excavation staff, which is very important but will not be dealt with here (we have no experience with it in Saxony), it is always a matter of differing levels of personal effort and commitment, even within the same system and under the same framework conditions. This factor has the largest influence on the amount and quality of preventive/rescue excavations.

It is often said that general and inevitable problems within preventive/rescue excavations find their explanations in different causes, such as ineffective heritage laws, overall economic development and economic crisis, political understanding and acceptance, and the lack of social awareness. All these aspects surely have a more or less direct influence on heritage activities, but it is more a matter of who reacts in what way and at what time. After outlining the background to the situation in Saxony before and after 1990, comparing it with the development in other federal states in Germany, and briefly evaluating some of the results, I will finish by returning to the many possible reasons for the different ways in which the same profession is practised and evaluated.

Before and after 1990

After the Second World War, the German Democratic Republic (GDR), the territory assigned to the Soviet sphere of influence, retained the five states that had existed before the war, only slightly restructuring their borders and then subdividing them into 15 districts. While the country was nevertheless ruled centrally in all aspects, and neither the federal states nor the districts enjoyed any autonomy, every state did receive a Central Museum for Archaeology, while academies of science were established in line with the Soviet model. Only three universities (Berlin, Jena and Leipzig) had faculties of prehistory, with a limited number of students being taught on a rotating basis. If they behaved themselves politically, these students could generally expect to be permitted to work in archaeology after their studies. The number of students of prehistory and of those who practised archaeology was therefore very limited.

Unlike the Federal Republic of Germany (FRG) after the Second World War, where the federal states were autonomous in cultural affairs and individual heritage laws were amended only slowly (mostly during the 1970s), the GDR had one general heritage law, adopted in 1954. The law itself was not bad, but as far as large-scale projects (the focus of this paper) were concerned, it was difficult or more often impossible to realise its aims. Interestingly enough, the two systems had a very similar development (with a great many differences in detail, of course): in both the FRG and GDR, preventive/rescue archaeology was only rarely applied and 'flagship' projects

were promoted. This means that it was less a consequence of two different political systems and more a problem specific to the time and the spirit of the time, as well an issue of researchers' mentality. To conclude, the requirement to accompany large-scale industrial projects with large-scale excavations was not as common as it is today (although for some it is still not common even today). Large archaeological research projects focused on the themes of interest at the time, mostly based on archaeological cultures and specific topics, and were conducted in areas that were not endangered. They were often preferred to the more general approach that focused on the landscape, for which all archaeological information is important.

Since 1990, when a reunited Germany was again restructured, the country has consisted of 16 federal states, three of which are city-states (Berlin, Hamburg and Bremen). As Germany is a federal republic, all the states have considerable autonomy in many fields, including culture. Heritage management is therefore a matter for each individual state, which means that every state has its own heritage law.¹ These many different approaches make it generally impossible to refer to 'the German way'; moreover, a single state has many different ways of practising archaeological heritage protection within the given guidelines or legal frameworks. Consequently, the Valletta Convention of 1982 has had practically no impact on archaeological practice in Germany, and particularly in Saxony (Stäuble 2013: 59–60).

Legal basis after 1990, with a focus on large-scale preventive/rescue archaeology

In relation to large-scale preventive and rescue archaeology in Saxony (a federal state of approx. 18,400 km² with a population of approx. 4 million people), the immediate post-reunification period can now be seen as a kind of 'lawless' time, when many large development projects were carried out without any archaeological supervision at all. However, it was also when a new heritage law was being compiled (it was issued in March 1993). I will quote only two passages from Article 14, i.e. those with most significance for large-scale development projects:

'1) A concession from the cultural heritage department is required by anyone who: (1) plans to conduct building activities, construction work or watercourse regulation (re-location, renaturing, straightening, etc.) in a location where it is known or where it can be assumed that cultural heritage monuments exist.

1 The reason for more heritage laws than federal states lies in the fact that some of the old states which were joined together (e.g. North Rhine-Westphalia) retained their own different laws.

(3) As initiators, the responsible bodies of larger public or private building projects or projects for mining raw materials or other resources may be obliged to refund, within just and reasonable limits, the expenses for archaeological excavations, preservation of the finds and documentation of the features. ...'

Resulting from this legal basis, the period after 1993 saw different stages of archaeological activity in Saxony in relation to a range of topics. The reason for this step-by-step approach depended first and foremost on new cases; and as it was a new situation for all parties involved, everyone had to be convinced that it was better to cooperate with heritage management in order to realise projects in a planned manner. Since planning reliability is most important for developers, the heritage office has to guarantee that excavations are finished well before the construction works begin. However, the developer was not the only entity that had to be convinced; there were also extensive and protracted discussions with the responsible ministries and other federal state offices. As not all the items and problems could be addressed simultaneously, a gradual procedure was chosen, generally in correlation with the activities that arose. First, the open-cast lignite-mining areas in Lusatia and in the northwest region around Leipzig were addressed immediately after the law came into force in 1993. Large areas of the whole country had been affected by quarries of sand, gravel, solid rock and loam and kaolin; many of them had immediately been taken over, with old enterprises being bought up by Western European corporations in the early 1990s, meaning that only some of them were accompanied by archaeological excavations on a continuous basis. 'Others only came to our attention when new concessions were sought. The first projects for new interregional pipelines (gas, water, etc.) followed after 1995, and in recent years gas pipelines in place for 50 or more years have had to be replaced. New railways and motorways have been constructed, and considerable enlargements or modernisation works have been carried out mostly on the post-war or even pre-war road and railway network since 1996. Only some of the large-scale building projects for private houses and for industrial and business parks on the outskirts of cities, which began in the early 1990s, were accompanied by archaeology from 1994 onwards. We can say that most (if not all of them) have been supervised since the late 1990s, and continue to be so.

In contrast to the intensity of the activities, cooperation with the only university with a prehistoric institute in Saxony, in Leipzig, increased markedly only after 2006, mainly because of the cooperative relationship between the new persons in charge. With regard to external cooperation for investigations beyond direct archaeological tasks, there are many diverse scientific disciplines covered by a large range of scholars organised in different ways, from private individuals up to people attached to research institutes and universities not exclusively from Saxony. In contrast to other countries and even other German federal states, these 'neighbour sciences' are not handled by

staff members of the heritage office itself but by a vast scientific environment engaged in topics such as soil science, archaeobotany, archaeozoology, anthropology, dendrology and other chronological methods, as well as in many other special methods of analysis. They are, however, part of the regular documentation during and after the excavation itself. Alongside the standard analysis performed at every excavation, special new tasks might be needed for each new situation. While all these tasks belong to the documentation of the excavated site, the costs of the standard analysis are part of the sum negotiated and are therefore paid by the polluter.

There is no space here to discuss all the other details relating to the documentation drawn up during an excavation, the final report, the techniques used or the programs or methods used before, during and after excavation. They are applied as the situation demands. But it needs to be said that excavation, documentation and report are conducted according to a unique standardised model for the whole of Saxony. This model has always to be adapted to local needs and the individual ability and knowledge of the excavators. As soon as this data (the reports or the 'grey literature') is available (the period of time is defined by various factors, e.g. the duration of the excavations, which generally also reflects the density of archaeological features), it is placed in the archive, which also comprises a central GIS and which is available to all heritage office staff, as well as to specialists from outside and even interested non-professionals. Information on it and on the results is disseminated in the classic manner through oral presentations and publications for the wider public and for professionals, but journals and digital media are also employed. Of course, summary presentations are given in museums, if possible by adapting the information, but more commonly in special exhibitions.

These activities are probably more or less common to archaeological heritage management in many countries, albeit at a different level. However, if any differences in amount and quality exist, and they surely do, this is neither chiefly the result of the underlying law nor of economics or politics, even if these cannot be ignored. They are mostly a matter of personal attitude and estimation.

For large-scale development-led projects in Saxony, we can state that once we have succeeded in convincing the responsible persons at all levels, from private individuals to planning companies, from company owners to politicians, of the importance of giving archaeologists a sufficiently long period in which to do their work prior to construction or mining, and that cooperating with archaeologists is a good idea because it is plannable and therefore less expensive, archaeology becomes largely accepted. Of course, our demands must be 'within just and reasonable limits', and we ourselves have to judge this and be flexible.

In Saxony, cultural and archaeological heritage is defined by law as a matter for the federal state authorities: private companies are not allowed to conduct excavations. All archaeological heritage matters, i.e. those relating to underground features, are dealt with

and organised by a government agency, the Archaeological Heritage Office of Saxony in Dresden. In addition to the practical heritage management offices (two archaeologists responsible for special tasks: one for medieval archaeology within city centres, the other for large-scale projects across the whole state, with another six mainly organised on a regional basis), there are administrative offices, the archive, a large central depository of finds, restoration laboratories, an editorial department and a special library. Every aspect of heritage management is therefore covered. There are also several external departments in the three large districts in the northwest, in the centre and in the east of Saxony, dealing with the open-cast lignite-mining areas around Leipzig and in Lusatia. The new State Museum of Archaeology Chemnitz (SMAC), which opened in 2014, is physically separate from the headquarters and located some 70 kilometres west of Dresden.

The enormous increase in the number and areas of new development-led projects in the 1990s led to an increase in the number of archaeologists. Unemployment amongst archaeologists was quite high in Europe and many of them came from the western German federal states, the UK, Poland and the Czech Republic. In Saxony, all development-led excavations are performed by workers from other professions, with archaeology professionals only being required as site directors and field technicians. On the other hand, many people in East Germany lost their jobs after reunification, as many companies were closed or the number of workers reduced; in response, the state created a large number of job programmes, which were of great help to archaeology as well. Since these job-creation programmes were co-financed by the state employment agency, they also constituted supplementary financial assistance for excavations. That meant that polluters did not have to cover all the costs of the excavations and the documentation. Many of these workers were interested in and eager to learn archaeological skills, and a large proportion remain in the archaeological service to the present day. Now, in the absence of job-creation programmes, they are employed by the heritage office and their wages are fully paid by the developer.

Before and after 1990

However, it is only partly true that the explosion in the number of preventive/rescue excavations is due to an increasing number of development-led activities occasioned by larger investments following the collapse of the Iron Curtain (Stäuble, et al. 2011: 26).

The areas destroyed by open-cast lignite and other mining activities before 1990 were larger than they are today. As the GDR tried to depend as little as possible on fuel imports, even from its 'brother states', the lignite-mining industry was extremely powerful. In northwest Saxony, the mining region around Leipzig after the war consisted initially of 16 mines, concentrated in five large mining areas. These mines

operated simultaneously, destroying many hundreds of hectares of land each year. This happened more or less without any archaeological surveillance: only one archaeologist, assisted by a technician and sporadically also by volunteers, had to cope with this enormous destruction process (Fig. 1). The result was a small and sporadic distribution of single finds and structures discovered by chance. Only a very reduced number of already-known prehistoric (Herklotz 1987) or medieval sites (Mechelk 1987) and small areas were excavated and thereby rescued by Leipzig University and the Saxony heritage office in Dresden. After 1990 most of the mines were shut down or merged into the four remaining mining areas, which are run on a successive basis. Mining works now destroy 'only' about 50 hectares per year; areas that have already been excavated then need clearance from the heritage office. All these endangered areas have consequently been checked by archaeology since 1993 (Stäuble 2010, 69–70). Generally speaking, we have one or two years in which to carry out excavations in advance for each of these annual tranches. Between 25 and 100 workers are involved (the precise number depends heavily on the number of sites and features) for 12 months a year.

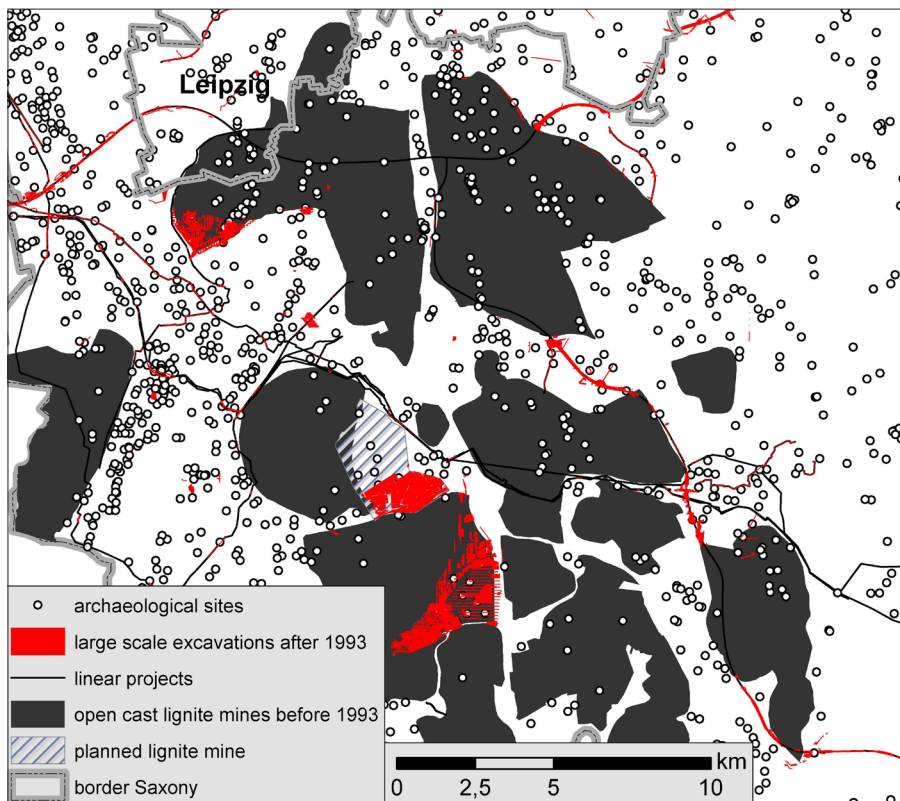


Fig. 1. Northwest Saxony south of Leipzig, showing the areas destroyed by open-cast lignite mining before 1993 (accidental finds) and large-scale excavations after 1993.

Of course, the process of evaluation starts a long time before an excavation and comprises all stages of research, from theoretical considerations to 'hard prospection'. This is therefore always carried out with no reference to any former knowledge (see below).

Moreover, the large industrial areas that were often concentrated close to the lignite-mining areas were bigger than they are today; they therefore had more archaeologically unattended land consumption before 1990. A large number of pipelines were built, but in Saxony only one was accompanied by archaeologists before 1990. These days we adopt the same strategies and methods with new pipelines as we do with the lignite mines. Depending on the width of the transect, we open 20 to 30% of the total width of the area along the whole distance; here the topsoil has to be stripped away. In places where we find traces of prehistoric activities, we open the entire area concerned. Archaeological excavations of older pipelines requiring replacement show us that the loss of archaeological monuments around the pipelines built before 1990 was, in a certain way, less significant, the reason being that the process was much less invasive, with only the trench itself being dug (Fig. 2). Pipe-laying worked directly from above the top soil without the top soil being stripped away, as is necessary today on account of the new soil protection laws. That said, at least pipe routes can be excavated today so that information about archaeological sites not formerly documented can be saved.



Fig. 2. Prehistoric features disturbed by an old pipeline and today's requirement to strip large areas for pipeline replacement.

The same applies to the large post-war housing projects, not only in large cities such as Dresden, Leipzig or Chemnitz (Fig. 3) but also around smaller towns and even in the countryside. There, large agricultural cooperatives or other small industries were established and were mostly accompanied by large housing complexes. As with the lignite-mining areas, only a small handful of these projects could be archaeologically supervised. But the calculated quantity of destroyed surfaces for housing per capita is nowadays probably even larger, as many people no longer want to live in 'social silos', as the corporation flats might be called, but in private houses with small gardens. But again, these projects could be checked and excavated by archaeologists, at least after 1993 (Fig. 4).

Of all the mining or construction activities involving large landscape consumption before and after 1990, only a few were infrastructural projects, for example roads and motorways. In the GDR between the end of the Second World War and 1990, these were repaired rather than newly built; consequently, archaeological substance was unaffected (Stäuble 2010: 77).



Fig. 3. Large housing projects in the Dresden area, built without any archaeological surveillance (end of the 1980s).



Fig. 4. An example of a modern housing project in Leipzig-Quasnitz, 2015–16.

The archaeologies of different times: West – East – West, small-scale – large-scale, thematic – landscape archaeology, research – heritage excavations

Many of the differences between the way large-scale invasive projects were supervised and monitored by archaeological heritage entities in 1945–1990 and after 1990 are valid for the western federal states of Germany as well. Interestingly enough, the differences were not so much the result of the different political and social systems or archaeological traditions, and the similarities seem to have been dependent on the same strategies of and approaches to archaeological science at different times. One reason could be that no one was able and willing to pay for large-scale archaeological rescue excavations immediately after the war. Even disregarding the financial possibilities, which were of course generally higher in the West than in the East, it seems

rather than the reason lay within the traditional concepts of archaeology and scientific research of that time. No one appears to have been properly concerned by the fact that thousands of undocumented archaeological monuments were destroyed within the large areas cleared for reconstruction and the creation of new infrastructure; at the same time, archaeologists were engaged in excavating sites that were not endangered at all. In those times – and here again, there was no big difference between the political systems – it was common for ‘flagship projects’ to be given funding preference no matter whether the archaeologists came from universities, scientific academies or heritage offices. This changed slowly and only in some of the West German federal states in the late 1970s, e.g. when lignite-mining archaeology was established in the Rhineland (Schwellnus 1981). With regard to pipeline archaeology, this happened even later (Baumewerd-Schmidt & Gerlach 2001), as it did with railways and motorways, many of which were supervised by archaeologists only after reunification (Nadler 1999; Cziesla & Ibeling 2014). All heritage laws established during the 1990s were based on experiences from West Germany. Again as a reaction to East German experiences with these new laws, where the polluter-pays principle was in force many heritage laws from the so called ‘old lands’ of West Germany have also been changed at the end of the 1990ies and after 2000.

Since 1993 in Saxony, we have had the opportunity not only to be involved in all major construction projects, but to check about one quarter to one third of all areas earmarked for destruction by stripping the top soil with the help of a mechanical digger.² All settlement areas discovered using this method are then opened and excavated completely. If we do not find any traces of prehistoric activities at sites already known to us, we conduct some supplementary hard or soft prospection work. As all activities are attended by geoarchaeologists, we generally have good documentation on the old and new topographical situations and explanations regarding preservation. This means that the necessity of excavations – and again, I am talking here only about those development-led projects that cannot be avoided – does not depend on whether there are known prehistoric sites within the areas of the project. As this method is also applied in areas without sites that are already known, this often leads to a very considerable difference between sites that were known before and those that have been newly discovered through trial trenching. By systematically using this method of preventive/rescue archaeology we have between five to tenfold increase in archaeological sites (Stäuble, et al. 2007, 31-34, fig. 9). Even if no archaeological traces can be found, the scientific result is still positive. The method allows us to confirm the absence of archaeological features in regions with better, more direct proof and by

² The usual soft or ‘non-destructive’ prospection methods, such as field walking, geophysics and aerial photography, do not work well (or at all) in many parts of Saxony, the reason being the very heterogeneous soil materials from the Ice Age sediments.

using a multidisciplinary approach. This function, which corrects our former knowledge of on-site distribution and the prehistoric use of landscape, makes preventive/rescue archaeology of enormous benefit to all archaeological research. No comparable method achieves as much.

On quality and quantity

Over the last 20 years or so, preventive archaeology has not only increased the number of known sites but, by excavating large areas, also fostered an enormous increase in features, houses, settlements and sometimes even entire landscapes, and has also allowed us to produce completely new distribution maps. The large excavation areas have to be excavated more quickly (but also more efficiently) compared with scientific research areas. They also bring us a great deal of supplementary qualitative information. Linear Band ceramic wells, for example, have been found in large numbers in the last 10 years precisely because of the strategy to excavate whole archaeological sites, from the core to the margins and even beyond (Kretschmar et al. 2016).

As a further result of this approach, we should also think about the level, quality and amount of information we gather when discovering and documenting such large areas based on ideas formulated within excavation areas of a few square metres.

However, if we compare the quality of the normal preventive/rescue excavations being practised now in large-scale projects with that of the research projects we used to conduct when I was a student 30 years ago, the difference is not so great. Back then, between 10 and 15 students would excavate about 3,000 m² of a similar kind of settlement, working on it for two months a year. Part of my Master's thesis involved an interpretation of the features and the site (Stäuble 1997), so I feel I am well placed to judge the quality of the documentation. My conclusion is that there were no differences in quality in comparison with the rescue excavations carried out today.

Perhaps we should even rethink the value of 'classic data' and the claim that the bigger the amount of data, the more detailed and more 'objective' the documentation and the more suitable it is for scientific evaluation. In order to critically re-evaluate this concept, we occasionally organise a special project within large 'polluter-pays' projects of long duration (lignite-mining or motorway archaeology). For example, we chose at random a pit of a large settlement of Linear Band ceramic culture that had been excavated completely over an area of 15 hectares, and organised a very detailed 'Palaeolithic-like' excavation with students from the University of Leipzig using three-dimensional recording for each find and whatever new techniques were available, most of which we use daily during 'normal' rescue excavations. Two

teams of seven students worked for six months on this ‘research experiment’. One student, who was writing her Master’s thesis on the excavation, was permitted to organise and conduct the works (Hoga, in preparation). One aim of the project was to find out how much longer this kind of excavation took and how much more it would cost if the whole settlement were to be excavated this way; we also wanted to find out whether it would be worthwhile and helpful to excavate and document everything in the same way, and indeed whether such supplementary information was useful for understanding the sedimentation and taphonomic processes of the pit. One of the findings was that we produced too much information, which made processing and analysis difficult. The results are not at all simple and, of course, not unambiguous. Most crucial, however, was the finding that even though a large amount of extra information had been interpreted, this did not constitute an improvement over the interpretations produced for neighbouring features excavated in the regular fashion. It is difficult to imagine the time and money that would be needed to excavate the whole site in this way.



Fig 5. Excavations of an Early Neolithic well from Droßdorf in a hall near where it was discovered (lignite mining area in Peres, south of Leipzig).

This discussion changes completely if we apply very detailed analysis in special cases, as with special features such as Linear Band ceramic wells. These are, of course, handled in a special way, and if the time management of a rescue excavation does not allow for a proper excavation on site, we take special measures and transport some features in blocks to an off-site location, giving us sufficient time in which to excavate them under laboratory conditions (Kretschmar, et al. 2016).

In this particular case, the small excavation is open to the public for one afternoon every two months: we call it 'A look over the shoulder of archaeologists' (Fig. 5). The costs of transporting the 30-ton block, the protracted excavation (probably some two years), the analysis and the rental of the hall are all covered by the lignite mining company. Particularly during these hard times for lignite-mining companies, which are fighting for public acceptance, this public presentation of a work in progress, together with an exhibition about the site built around it, is a welcome and well-appreciated public relations platform (the same applies to politicians, with mass media and public interest at the forefront of their minds). Moreover, a great many scientists gather here for discussions, so there are networking opportunities as well.

Conclusion

The general problems that affect the practice of preventive and rescue archaeology (which I refer to as one here) can, at the same time, be the solutions as well. One generally makes reference to insufficiently good or clear laws or to the influence of overall economic development, and much less commonly to the personal attitude of each of us regardless of position, from the field-worker to the excavation leader, from the responsible person at the heritage management organisation to the director, and regardless of whether the excavation is done by a company or by a state organisation. In my opinion, however, these less commonly considered factors have the biggest impact on how preventive and rescue archaeology is conducted at any time, whatever the legislative, economic and political background.

We need a good legal basis for heritage management, of course, but laws are not the most important factor determining how preventive and rescue excavations work. There are enough examples of countries that have a less satisfactory legal background but still have very good options for action. Unfortunately, the converse also applies: in some countries with better laws, preventive and rescue archaeology is not practiced in an appropriate or realistic way.

The same applies to the economic development, which surely affects the number of projects but should never affect the amount or the quality of preventive archaeology. The strong dependence on economic development obviously means that there is

an impact on the number of projects, particularly at times of fluctuation and crisis; however, it does not have to affect heritage management in a negative way and definitely does not influence development-led projects in a directly correlation. Neither the state nor the polluters are more 'generous' when the economy is more prosperous – in fact, sometimes it is quite the opposite, as archaeological items can also become an important social factor in periods of economic stagnation or identity crisis, which can easily lead to a political (mis)use of them.

Economic development might be more important with regard to the number of projects handled. In this case, the crisis is positive insofar as less investment and fewer invasive projects mean less destruction of areas and prehistoric monuments. If we only look at archaeological practice from an economic point of view, and organise preventive and rescue excavations with ever-expanding private firms, the economic crisis will have an important effect on the people working there. We are certainly aware of the endless spiral typical, for example, of the house-building industry: new streets are needed, necessitating concrete in ever-larger amounts, which calls for new and larger gravel and sand mines. Although preventive and rescue archaeology are hopefully part of this system, at least we do not have to encourage the ever-increasing sealing of the soil and thus, indirectly, the destruction of archaeological monuments, just in order to support our species.

As long as preventive and rescue archaeology is dependent on economic fluctuations, we will have to adapt and use periods of stagnation not only to catch up with the science and with publications, but also to adapt and improve the methods to the new situations.

Archaeologists should generally use these periods to consolidate, while those who have no backing yet should use them to gain more social acceptance, which is perhaps the most important aspect for improving the status of our profession in society. This can obviously only be achieved if we open our work up to cooperation with the popular mass media as well as with scientific publications, and through exhibitions and museums. Social acceptance of archaeological items does not have a direct correlation with economic wellbeing – in fact, the opposite could very well be the case. Social identity is particularly vulnerable at times of economic crisis; here we have to be even more careful to guard against the abuse of archaeological items and prevent their misuse for nationalist ideas and movements. This is the point at which we should, at last, mention political support, which is one further important aspect when examining the problems and solutions that influence our archaeological profession.

Not least, it will always be personal attitude, as well as personal preferences, that constitute the most important factors regarding the way archaeology is conducted in practice, at all levels. Only through personal dedication can we change things.

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