

INDUSTRIAL ARCHAEOLOGY
AS A BRANCH OF THE STUDY OF THE
HISTORY OF MATERIAL CULTURE, SOME
THEORETICAL AND METHODOLOGICAL CONSIDERATIONS

by

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Almost 20 years after the term Industrial Archaeology was first coined in Britain, the concept begins to be widely known in Belgium.

Several Belgian universities have taken up the study of this "new" aspect of historical research. In May, 1973 already a national congress was held and a National Society for the study of Industrial Archaeology was subsequently founded.

INDUSTRIAL ARCHAEOLOGY AND THE
INDUSTRIAL REVOLUTION

G. van den Abeelen, director of the Union of Belgian Enterprises, has defined I.A. as follows : "Industrial Archaeology is the rational study of the material remains of the Industrial Revolution" (1). His point of view seems to have found acceptance with other Belgian originators of I.A.

The term Industrial Revolution may have different meanings. It may refer to any swift and important technological change. In that case we may, for example, speak of an industrial revolution in the 13th century (e.g. : the widespread use of the fulling mill). Other historians mention an industrial revolution only when a set of technical innovations occur in a determined area involving the

(1) G. VAN DEN ABEELLEN, *De industriële Archeologie*, Brussel, 1972, p. 6.

substitution of manual skill by machines, the end of human and animal labour as energy of motion, the birth of industrialism which replaced handicraft. Many Third-World countries have not yet gone through such an industrial revolution.

When speaking of "the" Industrial Revolution, however, we think of what happened during the years 1750 to 1850, when, first in England, then in the rest of Western Europe the traditional agrarian economy and manufactural industry were transformed into a modern economy characterized by machinery, great industries and proletariat. In his definition G. van den Abeelen clearly refers to "the" Industrial Revolution, which took place in Belgium in the first half of the 19th century, although he includes some important technical inventions of the beginning of the 20th century as well.

At the university of Ghent, the I.A.-research-team, which came into existence under the impulse of the irreplaceable Prof. Jan Dhondt, stick to the definition given by G. van den Abeelen. They too do experience some difficulties in fixing time-limits for I.A. They work on the 18th and 20th centuries as well as on the 19th century. The team rightly think "it will offer the great advantage of enabling them to study longer evolutions as well as the repercussions of certain industrial inventions and products" (2).

Thus I.A. does present difficulties as to its chronological limits. But that I.A. and Industrial Revolution should be related seems to be an established fact to all these researchers. In this they subscribe to a view of I.A., that has been losing more and more adherents in England.

Recent publications clearly show that the English researchers no longer hold the opinion that I.A. should only be concerned with the period of the Industrial Revolution and the decennia immediately preceding or following that period.

Prof. Kenneth Hudson too, who defined I.A. as "the organised, disciplined study of the physical remains of yesterday's industries," has already advocated the choice of not too strict time-limits (3). In practice, however, he proves mainly concerned with the 18th, 19th and 20th century (4).

(2) "Industriële Archeologie, Verslag van, en bemerkingen bij de avond over 'Industriële Archeologie', georganiseerd door de Vlaamse Geschiedkundige Kring, op 29 januari 1973", in : *Histopia, tijdschrift der V.G.K.*, III, nr. 6 (april 1973), p. 2.

(3) Cfr. R. PITTIONI, "Studien zur Industrie-Archäologie, I. Wesen und Methode der Industrie-Archäologie", in : *Anzeiger der phil.-hist. Klasse der Oesterreichischen Akademie der Wissenschaften*, (1968), pp. 123-124.

(4) "Industriële Archeologie, Verslag ..", p. 2.

Dr. R.A. Buchanan defines I.A. as "a field of study concerned with investigating, surveying, recording and, in some cases, with preserving industrial monuments". To him an industrial monument is "any relic of an obsolete phase of an industry or transport-system." According to Dr. R.A. Buchanan I.A. may refer to the 20th century as well as to the neolithic age. He thinks it "useful", however, to concentrate upon the last two centuries (5).

Arthur Raistrick, who used to study I.A. long before it had been given a name, takes up a much more logical view in his book "Industrial Archaeology : a Historical Survey" published in 1972. He does not confine I.A. to a given period - whether in theory or in practice (6). The "Industrial Archaeologists' Guide" published in 1971 by Kenneth Hudson and Neil Cossons, who define I.A. as "the field-work aspect of the history of industry, technology and transport" likewise abandons any chronological limitation (7).

Why the originators of the Belgian I.A. go on believing in the chronologically limitative conception of I.A. is nowhere explained. Therefore, we don't know whether they have fundamental or practical objections against a widening of their field of research.

IN SEARCH OF THE MEANING OF INDUSTRIAL ARCHAEOLOGY

Everything depends on the meaning given to I.A. What questions may be answered by I.A. ?

There does not seem to be any agreement as far as this is concerned. On occasion of the publishing in England of a book about the different designs adopted since the Industrial Revolution for blast-furnaces, silos, gasometers, watertowers, etc. one Belgian originator of I.A. is pleased to remark that "I.A. has at last grown from inventory,... classification, chronology and scientific hobby into a historical morphology". This he calls "an important and undeniable progress" (8). But certainly, I.A. should have more to

(5) R.A. BUCHANAN, *Industrial Archaeology in Britain*, Harmondsworth, 1972, pp. 20-21.

(6) A. RAISTRICK, *Industrial Archaeology, a Historical Survey*, London, 1972.

(7) N. COSSONS & K. HUDSON, *Industrial Archaeologists' Guide, 1971-73*, Newton Abbot, 1971, p. 15.

(8) G. VAN DEN ABELEN, o.c., p. 14.

offer than a fine picture-book, displaying the different forms of watertowers !

The Ghent team relate I.A. much more to a social back-ground. The team want to discover the rhythm of the technological evolution, in order to acquire a better understanding of other changes of a demographic, social and mental-ideological nature (9).

Indeed, I.A. makes sense only if, by enabling us to follow the development of the means and methods of production, it sheds more light on the social, economical changes amongst others, which have occurred in the course of time.

Strongly influenced by the late Prof. Jan Dhondt (10), his pupils are more and more of opinion that history is the study of human behaviour in the past. In that they start from the principle that, in spite of altering circumstances, the collective behaviour of man presents a certain degree of recurrence. While studying this phenomenon special attention is drawn to the influence of material circumstances on human behaviour. In this way I.A. may well prove invaluable, as a means of getting to know the material aspects.

When probing the recurrent nature of human behaviour, thereby determining the interaction between behaviour and material circumstances, one cannot but inquire into the centuries preceding the Industrial Revolution, which implies that, in the future, it is more than likely that earlier periods will have to be included.

How can one, for that matter, grasp the import of the changes, that characterize the Industrial Revolution, if one does not even have a clear notion of the methods of production, the industrial equipment, the tools and such-like used in previous periods? How can one determine, whether something is new, if we don't even know what existed before.

INDUSTRIAL ARCHAEOLOGY AND THE STUDY OF MATERIAL CULTURE

In Britain as well as in Belgium, enthusiasm for I.A. conceals one major danger : the tendency to apply I.A. too exclusively when

(9) Prof. H. BALTHAZAR in : "Industriële Archeologie, Verslag...", pp. 8-9.

(10) Cfr. J. DHONDT, "L'histoire récurrente", in : *Diogenes*, LXXV (1971), pp. 26-59.

examining the material aspects of production.

Naturally, I.A. only studies those industrial activities that have left tangible remains, such as old plants, tools, machines or buildings. Thus, the choice of a subject matter is guided by the finding whether there are still material remains or not. This implies, however, that an important activity of which there happen to be no relics, is in danger of being overlooked.

To avoid this possibility, it is about time that one should realize that I.A. is in fact part of a specific branch of the historical science, i.e. the history of "Material Culture."

In Poland particularly this has been done for the last 20 years. The review "Kwartalnik Historii Kultury Materialnej" has been published there since 1953. But in France too, especially in the review "Annales, Economies, Sociétés, Civilisations", interest in the subject has been aroused. In 1967 Fernand Braudel published the first part of a book entitled "Civilisation matérielle et Capitalisme" in which he describes the daily material life of people in the past (12).

Braudel deals with much more than the merely industrial activities of man : food, housing, clothing and the standard of living. The Polish historians also study all these aspects, but true to Historical Materialism they consider the study of material culture to be mainly the history of production-forces, raw materials, human labour and technology. In this way they want to get an insight into the production-methods in order to get a better knowledge of the social relations (13).

The approach of these students of the history of Material Culture, also with reference to the study of industrial activities, is more complete than the one of the industrial archaeologists, because the former start not only from material relics, but also from written or iconographic sources. Even without material relics it is still possible to study Material Culture.

One should keep in mind, that by studying only I.A., one will never be able to understand historical reality in its most complete

(11) H. GAUS & E. WITTE, "L'histoire, science du comportement", in : *Revue belge d'histoire contemporaine*, IV (1973), pp. 475-501.

(12) F. BRAUDEL, *Civilisation matérielle et capitalisme (XVe-XVIIIe siècle)*, dl. I, SL, 1967.

(13) K. MAJEWSKI, "The History of Material Culture", in : *Kwartalnik Historii Kultury Materialnej*, I (1953), pp. 26-27; J. PAZDUR, "The Tasks of the History of Material Culture with reference to the present-day Situation", in : *ibid.*, II (1954), pp. 581-582; "L'histoire de la culture matérielle en Pologne", in : *Annales, Economies, Sociétés, Civilisations*, XVII (1962), pp. 75-84.

sense, unless for periods for which absolutely no other but archaeological sources are available.

SOURCES OF INDUSTRIAL ARCHAEOLOGY

Here a distinction can be made between primary and secondary sources.

Primary sources consist of the remains of industrial activities in the past. Industrial activity should be considered in the widest sense, i.e. as the economic activity consisting in the manufacturing of raw materials (activities of the secondary sector).

Some industrial archaeologists pay attention only to the remains of production on a large scale. What they call with a rather unclear term "handicraft activity" is beyond their interest (14). This point of view is hard to uphold, especially when I.A. aims at studying the evolution of production forces. The large-scale production of merchandise is after all only a stage in the changing process of production-methods. To understand the rise of big industry, one should know the preceding stage from which it has grown. Products of our big export industries, such as textile and industrial art were mostly supplied by small handicraft manufacturers during the "Ancien Régime".

The primary sources not only include old industrial buildings, tools and machinery, but also the traces - in the earth - of tan-pits, clay-pits (which are pointing to the activities of the brick-yards) and the mine-galleries at Spiennes, which supply us with information about the production of silex objects during the neolithic period.

Some industrial archaeologists also consider the working-class houses as belonging to the field of I.A. In the Ghent team it was proposed to study the industrial products as part of I.A. If one wants to study all this, why doesn't one immediately decide to study Material Culture, to which these subjects undoubtedly belong?

If working-class houses and industrial products don't belong to the primary sources of I.A., they can certainly be considered secondary or indirect sources, as they give a deep understanding of the methods of production, social relations, etc. Secondary sources are all those sources which may be useful to the understanding of primary sources.

(14) R. PITTIONI, *o.c.*, p. 124; A. RAISTRICK, *o.c.*, p. 9.

Iconographic material ranks first among the indirect sources. The bas-reliefs, which decorate the guild-halls in our towns, often illustrate production processes. Paintings, stained-glass windows, miniatures, drawings and old photographs often give an idea of the means and methods of production (15).

Besides iconographic material, written documents too belong to the secondary sources of I.A. (16). The ordinances of craft-guilds from the "Ancien Régime" often contain instructions referring to the means of production. These facts can also be found in the statutes, ordinances and documents of the boards and commissions, established by the government in order to keep an eye on the quality of production.

Systematic expositions, in which industrialists give us a description of the technical progress of the production-process rarely appear before the 18th century. Technical knowledge was handed down through practice from master to apprentice. Theoretical manuals did not exist. During the 18th century, with the rise of the big industries, people started taking notes concerning the technical aspects. This was necessary, as in the big industries there was a clear distinction between managing and executing labour. The extreme division of labour required that everyone's place in the production process should be clearly defined (17).

Since the 18th century more and more good technical manuals were published. Especially the "Encyclopédie" by Diderot and d'Alembert (1751-1772) can be very useful to the industrial archaeologist. Also magazines with technical news were published. For the 19th century, catalogues of annual fairs and international shows, in which the latest technical innovations were shown, are of the greatest importance, as well as the prospectuses of firms, which are often illustrated.

(15) An example of the use of iconographic material for the "Ancien Régime" : V. HUSA, J. PETRAN & A. SUBRTOVA, *Hommes et métiers dans l'Art : du XIIe au XVIIe siècle en Europe centrale*, Paris, 1967.

(16) What can be attained by combining iconographic, written and archaeological sources is shown by F. VAN TYGHEM, *Op en om de middeleeuwse bouwwerf, de gereedschappen en toestellen gebruikt bij het bouwen, van de vroege middeleeuwen tot omstreeks 1600, studie gesteund op beeldende, geschreven en archeologische bronnen*, 2 delen, Brussel, 1966.

(17) A. THLJS, "Aspecten van de opkomst der textieldrukkerij als grootbedrijf te Antwerpen in de achttiende eeuw", in : *Bijdragen en mededelingen betreffende de geschiedenis der Nederlanden*, LXXXVI (1971), p. 210.

The Middle Ages have left us some literary texts which give us a very accurate description of industrial activities. Many other written and published sources could be summed up.

Place-Names as well as popular language can also function as secondary sources. Some old inhabitants of Antwerp are still speaking of a metal factory at Hoboken, where, in the cutting of metal plates, so many accidents occurred that this factory got the surname of "Finger-thief." Even without studying these machines, we learn from this popular expression that they did not protect the working man against mutilation !

Secondary sources will be very different according to the period and the nature of the industrial activity we are going to study. Numerous historical data can be useful to the industrial archaeologist during his research at a certain moment or in a certain context.

A METHOD FOR INDUSTRIAL ARCHAEOLOGY

In I.A. of the earliest periods the same research methods can be applied as for the "classic" archaeology, which after all has always paid much attention to old manufacturing techniques (18).

The suggestions we are writing down here only refer to later periods : the late Middle-Ages, modern and present periods of which not only archaeological remains exist but also iconographic material, records and literary texts.

Let's suppose we want to study the I.A. of a municipality - even if we want to study the I.A. of a certain branch of industry we ought to explore one municipality after the other. How shall we start then ?

In a first stage the existing documents must be gathered. It is advisable to collect first the most recent documents before looking for the older ones. The purpose of this stage of the research is to examine which industrial enterprises existed in the municipality and where they were established.

For the 19th century, one can look up the registers which record all the inhabitants with their profession, street by street ("Bevolkingsregisters", "Registres de l'état civil"). Larger cities already had directories last century. Sometimes old patent-books

(18) S.J. DE LAET, *Archeologie en haar problemen*, Antwerpen, 1957, pp. 128-130.

(rolls of taxes on the economic activity of the inhabitants) can be found. To discover the existence of old specific industrial buildings, the registers of real property must be consulted in the first place. The maps published by P.C. Popp about 1842-1879 can be very useful as well. On the other hand dossiers of building-permits and of the "commodo and incommodo" can offer important material.

Tax-rolls and census are often available for the "Ancien Régime" as well, and give information about the economic activity of the inhabitants. Old maps often enable us to locate the exact site of industries for this period too. Notarial acts sometimes give a short description of the industrial equipment as far as an industrial building is concerned (19).

When this research of the records has been finished - which may take a great deal of time - and after the existing historical literature on the municipality has been examined it becomes possible at last to start the archaeological research, i.e. the time has come to trace what material remains of all those old industries still exist.

There is another way to start. The researcher can traverse a whole area, looking in every nook and corner to discover an old industrial building or installation, and then start the proper archaeological research immediately. The latter method is much quicker, but,*on the other hand, it has a great disadvantage : what has disappeared will not be found and consequently it will be impossible to define exactly the value of what is left. Moreover, only the clearly visible remains will be found.

On-the-spot research aims at recording the present-day situation of the industrial monument : no interpretation has been made yet. It is advisable to do this research with the help of a questionnaire to be sure not to overlook anything.

The report of this on-the-spot research should be made in such a way that, in case of a possible disappearance of the monument, enough data will be available to be able to define its place in the social-economic life of the field studied. In any case notes should be made of e.g. the exact site of the monument (locality, street and number, as well as the registry number and the possible place-name); name, profession and address of the owner; name and profession of

(19) Cfr. H. BALTHAZAR, J. DE BELDER, J. HANNES & J. VERHELST, *Bronnen voor de sociale geschiedenis van de XIXe eeuw (1794-1914)*, Leuven, 1965; S. VERVAECK, *Enkele bronnen uit de Franse tijd, hun belang voor de sociale geschiedenis*, Leuven, 1962. - About Popp : J. HANNES, "De 'Atlas cadastral parcellaire de la Belgique' van P.C. Popp, zijn betekenis voor de historische geografie der gemeenten", in : *Driemaandelijks tijdschrift van het Gemeentekrediet van België*, nr. 85 (july 1968), pp. 137-146.

the possible tenant; present day activity on the premises; date of research; name, profession and age of local informants; historical data as far as resulting from the on-the-spot research (wall-ties sometimes tell you when the building took place; informants may give information on the age of the industry - which must be verified -, earlier production methods or changes in the destination of the monument.

The description proper of the relic then follows. Where a building is concerned attention should be paid to the exterior as well as to the interior : colour, materials and construction of foundations, walls, floors and ceilings; shape and colour of windows, shutters and doors; roofing; elements of decoration and inscriptions on walls; functions of the different parts of the building; nature of the fixed installations (e.g. : the existence of a goods elevator); the drainage system for industrial waste; the shape of chimneys, etc. Where a tool or machine is described, it should be checked to discover what materials the relic is made of, whether any alterations (restorations if any) were undertaken, whether it was painted (in order to prevent rotting for instance).

Yet it is not only a matter of buildings and tools or machines : the lay-out of the buildings should be studied (among other things in order to verify whether a rational use was made of the available space) as well as the site of the industry with regard to the center of the locality. Was a pestiferous industry located in the middle of a dwelling area or not ? What factors determined the choice of the site : the presence of roads or of waterways ?

The answer to the last question will appear clearly from the plan of the site, which should preferably mention the contour-lines. Indeed, a thorough report requires a series of maps and surveys. The floor-plans are of special importance among the measurement-drawings. They not only convey the size of the buildings but also the location of machines and installations. If it is possible to distinguish welldefined building periods in the masonry or in other parts of the constructions, this should be marked by different hatching. Cross-sections as well as longitudinal sections of the building are to be drawn, so that the structural design may clearly appear. The dimensions of the several fronts too are measured and mapped. Detail-drawings should probably be made of some elements as well.

A series of drawings is also made of tools, machines or installations, whereby measurements and used materials (timber, wrought iron, cast iron, copper, etc.) are accurately noted. Special attention must be paid to trade marks, which can sometimes still be found on the machines, and which may be important for the dating.

All drawings must, of course, be provided with an easily intelligible legend.

A complete report always includes a series of photos showing the fronts, the interior, certain interesting details of the construction; but also photos of the whole complex with a part of the environment. Judicious photographing of machines, installations and tools is also required. Colourslides are especially useful, because they give a good idea of the used materials. It is very important to mark accurately on the ground-plan from what angle and in what direction each picture was taken.

If people are still working in the industry and old production methods are still being applied, a film with sound-track must be shot. The film can teach us a lot about working-conditions, and a tape-recorded conversation with the workers, will clear up this question even more.

At this stage especially the industrial archaeologist is likely to receive invaluable assistance from the local historical societies, whose members know their district thoroughly (its topography and history), are well known to the local authorities and are in contact with old industrial bosses as well as old workers. It should be added that the activities involved in studying industrial archaeology are so varied, that it is necessary, to be able to call on a wide group of willing persons, representing all kinds of professions: civil engineers, architects and surveyors are often found among the members of a local historical society. What more can an industrial archaeologist wish for?

By the way, local historical societies can have an irreplaceable function in the saving, restoring and revalorizing of old industrial premises. But it is necessary though for university-trained historians to take a more active part in those societies. The local historical museums can see to the conservation of old tools and machines (tasks which they already used to assume before I.A. as such existed), much better perhaps than some central museum, which, as it would soon get cluttered with relics torn from their local context, would soon run the risk of being turned into a "museum of technology" with only some striking aspects of the technological evolution.

The interpretation following on the field-work, is perhaps not so spectacular, but certainly as important. The purpose at this stage is to discover what the building looked like, in order to find out what this monument might tell us about the social-economic history.

For this task, the researcher will not make use only of his own recent descriptions and surveys but also of the documentary material

(cadastral survey and the like), compiled in the first stage of the investigation (at a time when the object was to discover what industries ever existed in the area studied.)

In the course of the attempted interpretation renewed research in the archives will prove necessary, focused on the history of those industries, of which material relics were found. In some cases old business-archives may yet come to light and supply us with information about the material organisation of the enterprise.

All the secondary sources may now, somehow, be put to use. For it will not be sufficient to examine only the sources directly relating to the studied relic. To identify some tool or machine it will be necessary to consult an obsolete technical handbook, or to compare the relic with iconographic material. Of some objects there may be other examples in museums. The researcher should go into all this, compare and record.

In this way we come to the ultimate question of the significance of the relic. The architectural history of the building can tell us much about the economic development (a more recent wing may point to the expansion of the enterprise at a given time) or about changing production-methods (annexes or installations which were changed or put out of use during a period of technical innovation). If it can be specified from what time onward certain machines were used in the factory under scrutiny and for how long they remained in use, it is possible to establish whether or not a technical backwardness existed.

The relics may give important indications about social conditions : how was the lighting, the ventilation, the sanitation, were precautionary measures taken against working accidents, what was done concerning pollution and so on ?

Having gathered and examined all the information, a comprehensive synthesis should be published, adequately detailed and clearly explained, provided with an appendix setting forth the method used so that later workers should know what has been studied and possibly neglected. The industrial archaeological research, however, should be done with the utmost thoroughness, for in many cases we shall be dealing with a monument that will have to make room, before long, for a motor-way, a new factory or a new housing-estate.

After such reports have been published from various quarters, we shall soon have the disposals of a remarkably rich material for comparison, enabling the historians of the Material Culture to get a clearer insight into the processes dominating society.