

Manching Reconsidered: New Perspectives on Settlement Dynamics and Urbanization in Iron Age Central Europe

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Traditionally, research on late Iron Age societies of Central Europe has to some degree focused on large fortified settlements or oppida, presumably ranking at the top of the Celtic settlement hierarchy. The oppidum of Manching in Upper Bavaria has in the past been seen as a paradigmatic example of pre-Roman transalpine urbanization, in both chronological and functional terms. However, both its dating and its topographical position in a shallow flood plain of the Danube justify a distinction from contemporaneous or successive fortified 'towns'. Recent studies have identified another particular type of settlement – large unfortified centres of crafts and trade – as a major feature of prehistoric urbanization. Again, Manching and its pre-fortified stages of urban development reveal a characteristic scheme of eastern Celtic settlement evolution that eventually breaks with a standard development when a massive rampart is constructed. Based on recent research at Manching and its hinterland, and taking into account the dynamic character of urbanization, a flexible model of urban evolution is developed here. This model allows for a comparative and quantifiable notion of variable degrees of local and supra-regional urban status.

Keywords: Iron Age, urbanization, settlement dynamics, communication, architecture, urban layout, spatial density

INTRODUCTION: OLD PARADIGMS AND NEW MODELS

The La Tène (LT) *oppidum* of Manching is a key site of the European Iron Age. Early work hinted at the potential of what was to become a focal point of European archaeological research: Joseph Déchelette (1914: 477, Figure 404) compared finds from Manching with those from France, Hungary, and Bohemia, implementing the notion of a pan-European 'civilisation des oppida'. Paul Reinecke (1902) used the gravegoods of Manching's Hundsruken cemetery to define the chronological

period 'LT C' and a deposition of iron implements in the Leisenhart area to characterize his system's period 'LT D'.

The devastating events during the nineteenth and twentieth centuries that culminated in the building of an air force base in 1936 and its bombing in World War II meant that it took until 1955 for the first systematic large-scale excavations to be conducted in the centre of the *oppidum*. Since then, approximately 8 per cent of its 380 ha interior has been excavated, mostly under the guidance of the Roman-Germanic Commission (RGK) of the German Archaeological Institute

(DAI) (Figure 1). Since these early days, excavation reports and scientific articles were regularly published in *Germania* or *Berichte der Römisch-Germanischen Kommission*, as well as in numerous other periodicals and congress reports. One of the first summaries by Werner Krämer (1960), then director of the RGK and head of the excavations at Manching, presented preliminary results to the non-German speaking scientific community in *Antiquity*, and led to a wide recognition of Manching as a paradigm of late Iron Age settlement structures. Being an eminent example of Europe's *Earliest Towns North of the Alps* (Collis, 1984), its inventory of finds, its structures and layout, and its history and chronology were essential for the establishment of a basic framework for European settlement research.

The overall quantity and quality of objects recovered in the area inside the perimeter rampart, its enduring visibility and several excavations at its eastern gate and in other areas fostered the implicit notion of Manching as having been properly urbanized only after the building of the *muris Gallicus* c. 140–120 BC. The general labelling of Manching as an *oppidum*, that is, a massively fortified settlement, indirectly diminished the importance of earlier phases. Additionally, this view aptly coincided with a tendency to perceive late Iron Age *oppida* as the unique representatives of pre-Roman urbanization in Central Europe. However, excavations in the 1980s and 1990s in France and Switzerland generated an increased awareness of another distinct type of La Tène settlement: large open (that is, unfortified) sites revealing a strong involvement in long-distance trade and craftsmanship. Sites in *Gallia comata* like Aulnat, Levroux, or Basel-Gasfabrik gained considerable attention as *villages industriels* (note the omission of the term 'town') (Buchsenschutz, 1994, 1995, 2002;

Collis et al., 2000), and similar settlements in the 'eastern Celtic zone' were classified as 'centres of production and distribution' (Salač, 2005, 2009, 2012). They seem to constitute a distinct phenomenon, not so much in functional terms, but with regard to being abandoned early in LT D and – unlike many sites in Gaul – not being replaced by an adjacent hillfort or *oppidum* (Buchsenschutz, 1990: 192, 1994: 150; and, for example, Barral, 2003; Wendling, 2006).

While earlier classifications presumed a dominant position of *oppida* in the settlement hierarchy, the importance of those undefended sites in urbanization was stressed after recognizing that they revealed almost all features of urban status. From these foci of trade and crafts, certain sites stand out both in terms of size and religious engagement and in terms of intensity and diversity of economic activity, including coin production. Manching can be considered the most prominent, albeit special, example of these centres of the Némčice/Roseldorf type within the eastern La Tène culture (Salač, 2005: 290–92, 2009: 244–45). Detailed study of certain categories of finds – for example, fibulae and glass armlets – and the extent of the built environment, clearly indicates that a considerable level of occupation existed before the rampart was built. Thus, the evaluation of Manching's degree of urbanization has to be thoroughly reconsidered, integrated into an appropriate model of settlement evolution, and reclassified in accordance with a settlement hierarchy that has been established for the eastern part of Celtic Europe (Salač, 2005, 2009, 2012).

Earlier approaches to pre- and protohistoric urbanization suggested distinct criteria to test the urban status of a settlement. Within a framework of binary qualities naming the presence or absence of these criteria, the existence of urban

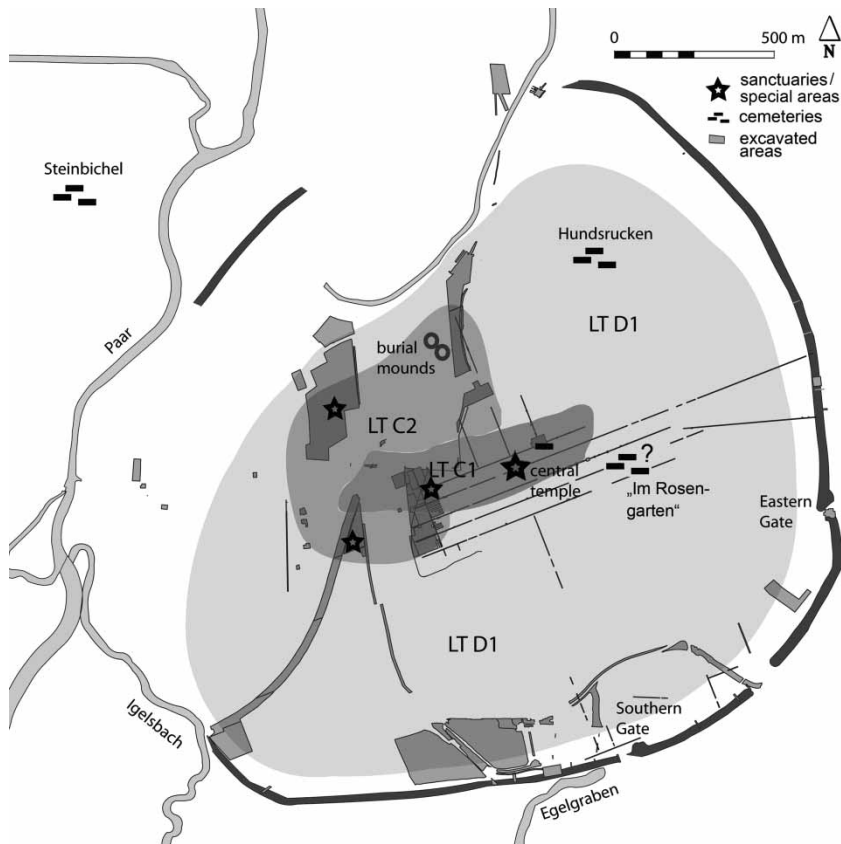


Figure 1. *Manching.* Schematic plan of archaeological sites and features, excavated areas, and settlement expansion from LT C1 to LT D1.

Image: H. Wendling & RGK.

space was either rejected or postulated (Childe, 1950; Kolb, 1984: 13–15; Hänsel, 2005: 188–89). Some inconsistencies in this monothetic classification, including the lack of a temporal dimension acknowledging the development (increase and decrease) of certain characteristics and inherent limits of the archaeological record, show the inadequacies of this rather static model. For the most part, it only considers the *status quo*, whereas the dynamics of urbanization are largely neglected (Osborne, 2005: 4, 7). In order to envisage the changing character of Manching's development, a model of urbanization was developed by a research

cluster of the DAI that considers both quality and quantity of archaeological evidence concerning five major criteria, including objectified and quantifiable values:

1. Continuity and sustainability of settlement activities that can be quantified by an added value of three interdependent stages: 'current activity' might thus be quantified by a value of 1; 'continuity from previous local activity' will lead to the addition of another value of 1; due to its importance for settlement continuity, 'enduring future activity' is weighted and quantified by a value of 2.

2. The degree of social interaction and political communication can only approximately be evaluated by counting communal structures (for example, public space, temples, communal tasks) and comparing their number to contemporary 'rural' sites.
3. Topographical and structural proximity of the built environment: the ratio of built-upon space and overall area of the settlement (or excavation) offers a 'density index'.
4. Functional and structural diversity of building structures: a mathematical value combines the dispersion of length-width indices of buildings and the scatter of their size (Gaebe, 2004: 75–76).
5. Concentration and diversity of crafts, trade, and services is to be measured by an added value of different crafts, trading goods and agricultural activities.

This model can be applied in successive settlement phases and therefore acknowledges the changing character of urban space; it does not merely aim at a qualitative assessment of different criteria, but also a quantitative one, using a polythetic classification. As such, the model accepts change and fluctuation and stresses the notion of a degree of urbanization (Osborne, 2005: 7). The quantification tries to objectify the 'value' of criteria enabling a direct comparison of different temporal, spatial, and cultural phenomena. Within the same cultural context, a synchronic comparison of different parts of a settlement system concerning their 'urban value' is possible. Such a conceptual approach further acknowledges the contemporary existence of different, that is 'non-urban', forms of settlement organization (Osborne, 2005: 9). A comparative analysis can therefore reveal a network of urban and non-urban zones that differ in

their relative degree of development and complexity, where 'towns' act as social and economic centres. Such a dynamic and convertible urban classification allows for the identification of different gradual stages of urban growth and de-urbanization. Due to the scarcity of adequately investigated and comparable sites in the vicinity of Manching, the quantification of criteria is tentative. Thus, absolute values are suggested here that were calculated on the basis of five La Tène settlements in Bavaria. In addition to the LT C2 phase of the Manching *Zentralfläche*-excavation area, these comprise a small hamlet and a village at Poing, an *extra muros* settlement at the Viereckschanze of Weissenburg, and a section of a site at Straubing. All of them date to the late middle and late Iron Age – that is, the phases LT C2–LT D1. As the values are only a preliminary proposition and are likely to need adjustment when integrating more and remote sites – for example, sites in Gaul – and with regard to future research, for the time being, the criteria have to be evaluated semi-quantitatively using the admittedly subjective terms 'low', 'medium', 'high', and 'strong' (Figure 2).

THE SETTING: RESOURCES AND COMMUNICATION

One of the prime factors of settlement foundation and growth is Manching's excellent topographical setting that benefits both from adjacent mineral resources and lines of communication. The site is situated on a low-lying gravel terrace, about 10 km south of the modern course of the Danube near Ingolstadt in Bavaria. In ancient times, the river touched the settlement area on its northern fringe, with an old river bed forming a

strong	4		4:1		>0.12		>120		>12	strong
high	3		3:1		0.09 - 0.12		81 - 120		9-12	high
medium	2		2:1		0.04 - 0.08		40-80		5-8	medium
low	1		1:1		<0,04		<40		<4	low

continuity (additive value:
present activity 1; preceding
activity 1; continuing activity 2)

social interaction &
political communication
(relation urban/rural area)

condensed built
environment & infrastructure
(relation built overall space)

variation in building structures
(variation index length-width x
variation in building size)

diversification of crafts & trade
(additive value)

Figure 2. Five archaeological criteria for the identification and evaluation of urban space and development, quantified by a comparative analysis of several Iron Age settlements.
Image: H. Wendling.

natural river harbour. Together with other routes, the waterway offered an outstanding economic capacity, forming a node along important ancient trans-European routeways. The so-called *Donausüdstrasse* of the Roman period running parallel to the Danube certainly rests on pre-Roman roots that might have been responsible for the location of the eastern and western gates of the late La Tène rampart (Sievers, 2000–01). Finally, the river Paar, which runs in a northern direction towards the Danube, served both as a trading route and as a natural obstacle west of the Manching *oppidum*.

The flood-free position of the settled area stretches further along the course of the Danube, affording space for agriculture, which ensured the subsistence of an ever-growing population. Stock breeding might also have been practised in the

swampy meadows south of the later *oppidum* not suitable for cultivation of grain or vegetables. The vicinity of iron ore sources in the Feilenmoos wetlands south of Manching probably played a major role in the initial and later stages of the central place. Evidence from slag residue and recent geophysical prospection of supposed furnaces – albeit not securely dated so far – and the sheer number of iron finds at Manching give a clear indication of the dimensions of local bog iron exploitation (Seitz, 1938; Schäfer, 2002).

AN OLD LEGACY: THE PREHISTORIC OCCUPATION

The earliest traces of occupation at Manching in the area that was later to become the Iron Age central place date to the

Neolithic and Middle Bronze Age (Nieszy, 1992). In their immediate vicinity, aerial photography and a recently produced LiDAR topographical model show two very slight elevations of presumably Bronze Age burial mounds. Geophysical survey revealed slight traces of several circular ditches surrounding the bases of other mounds (Figure 3). Considering that these structures would still have been visible in the La Tène period, they might well have played a role in the ideological setting of the Celtic settlement. The invention of traditions could therefore have been connected to a materialized past that provided tangible ties to ancestral protection and proof of land holdings.

Apart from several Bronze Age burials and settlement residues that are scattered across the area, a better defined occupation can be identified during the Late Hallstatt and Early La Tène period. In 2010, a

geophysical survey near the eastern rampart revealed a so-called *Herrenhof* or 'chief's estate', of which only a small part of the north-eastern corner had been identified in rescue excavations of the early 1990s (Figure 4) (Burmeister & Weski, 1992; Wendling, 2011). The complex consists of a double or even triple ditch system with an entrance probably facing west. An enclosure separates a special area in the north-western corner, where a monumental residence may be postulated. Inside and outside the ditch system, concentrations of anomalies indicate the position of several other buildings for dwelling, farming, or industry. A line of strong positive anomalies along the eastern side represents a well-known phenomenon of early Iron Age *Herrenhöfe*, which has also been detected, for example, at Velberg (Bavaria) (Raßhofer, 2002). However, only excavation can confirm whether the

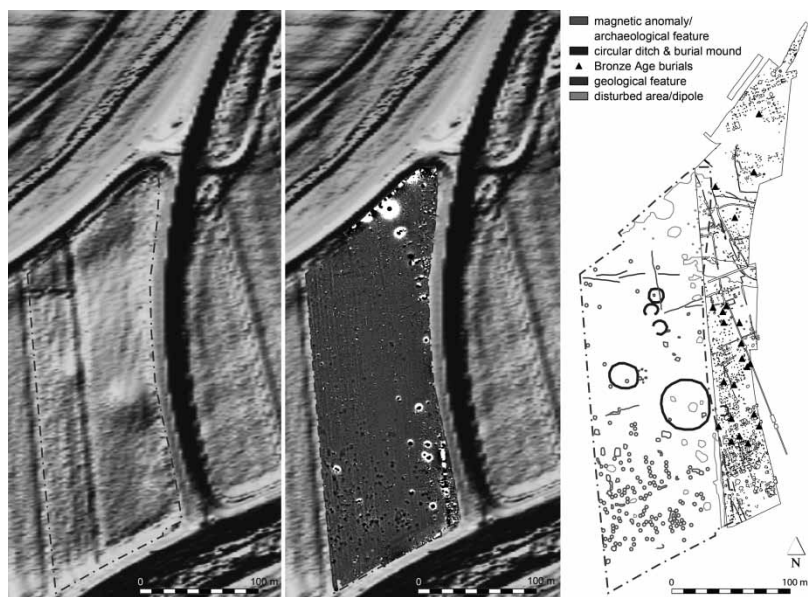


Figure 3. Manching, Nordumgehung. Multi-level analysis incorporating data from LiDAR remote-sensing, geomagnetic survey, and excavation revealing a comprehensive pattern of presumably Bronze Age burials and mounds and Iron Age settlement structures.

Image: H. Wendling & RGK.

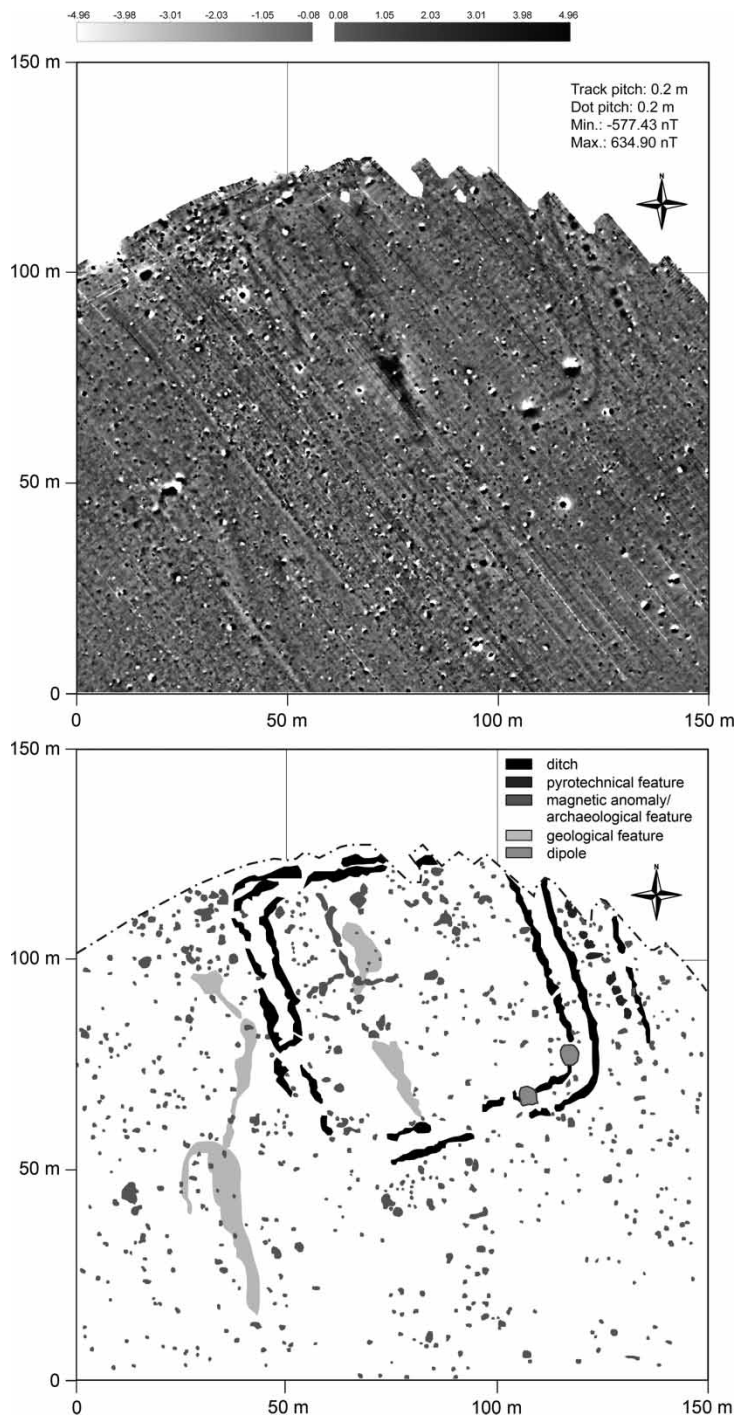


Figure 4. *Manching. Geomagnetic survey and digital plan of a late Hallstatt/early La Tène Herrenhof, or 'chief's estate', in the eastern vicinity of the late Iron Age oppidum.*
Image: H. Wendling & RGK.

Manching features are pottery kilns, ovens for food preparation, or metallurgical furnaces. The LiDAR model shows the sites' excellent position on an elevation just next to an ancient Danube cut-off (Figure 5). Seven kilometres to the west, the *Herrenhof* at Ingolstadt-Zuchering is situated in a similar topographic position (Berg-Hobohm, 2002–3: 169–70; Windheuser, 2010). At both complexes, the area to the south is favourable for agriculture, which served as the basic source of economic wealth. Neighbouring enclosed settlements are known at a distance of 3.5 km at Manching-Oberstimm and 2 km to the southwest in the periphery of the later *oppidum* (Hüssen & Leicht, 2003). To the east, there are several complexes at Vohburg and Geisenfeld, all at a distance of approximately 7 km from Manching (Berg-Hobohm, 2002–3: 176, cat. nos. 34–37). A late Hallstatt (HA D2/3) female burial at Ilmendorf, containing golden earrings, glass beads, and an amber necklace, might be related to one of these settlements (Claßen et al., 2010). The

grave at Ilmendorf and a bronze cist from Manching reflect wealth and status, but do not indicate a settlement hierarchy. Indeed, the equidistant distribution of the *Herrenhöfe* along the ancient course of the Danube could indicate an even division of the landscape into single territories. With a prevalent agricultural orientation, neither economy nor settlement activity shows any signs of centralization.

Evidence for further settlement activity at Manching is found at two LT B and LT C1 cemeteries containing rich inventories of weaponry and jewellery. Although no traces of corresponding settlements are known so far, these cemeteries, together with a single grave nearby and a presumed cemetery in a field meaningfully called Rose Garden (a medieval or modern name that was chosen to indicate relics of supposed ancient graveyards), are thought to be the *nuclei* that formed the initial points of an emerging unfortified settlement. Their occupants presumably concentrated in a 'synoecism', that is, a nucleation into a central settlement. Only the northern part of the *Zentralfläche*, right in the centre of the area that was enclosed almost 200 years later, produced finds dating to this first stage of settlement concentration (Gebhard, 1989: 184–85).

Exceptional objects, dating to around 300 BC, were found in the vicinity of an outstanding building, approximately 250 m to the east. On the basis of the quality of the associated finds, its long lasting existence, and its exceptional circular form in later phases, this building has been interpreted as a temple (Figure 6). Several associated finds of iron and bronze implements, and tools and weapons in its direct vicinity, reflect activities of deposition and offerings also known from other late Iron Age ritual contexts (Sievers, 2009, 2010a: 72–81). Similar practices occur in enclosed and

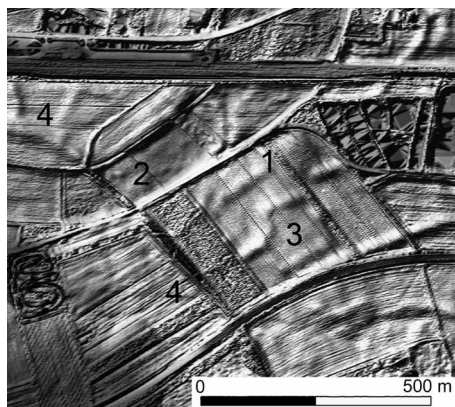


Figure 5. Manching. LiDAR topographical representation showing the position of: a late Hallstatt/early La Tène herrenhof, or 'chief's estate' (1), an ancient river-bed of the Danube (2), a presumably medieval or modern enclosure (3), and the course of the late Iron Age rampart (4). Image: H. Wendling & RGK.

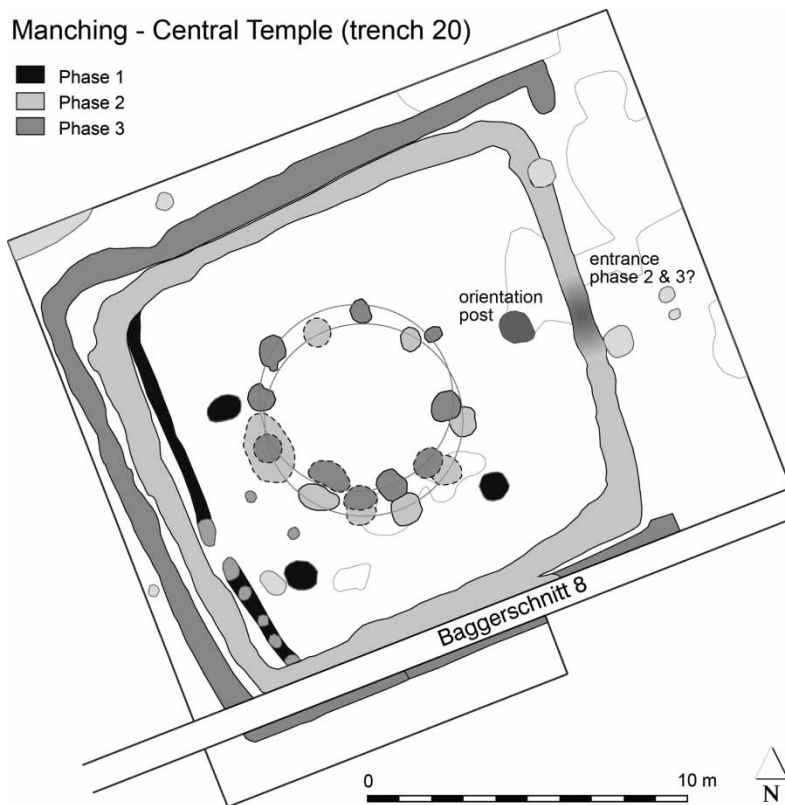


Figure 6. *Manching. Three-phase temple area in the centre of the La Tène settlement. In use from at least LT B2/C1, this cosmological focus served as a mathematical centre for the construction of the fortification almost 200 years later in LT D1.*

Image: H. Wendling.

ditched temples, for example, at Gournay-sur-Aronde (Oise) or Tintignac (Corrèze), as well as at sites containing large hoards, such as La Tène (Neuenburg) itself (Maniquet, 2008, 2009; Honegger et al., 2009). At Manching, these objects, among which fragments of a Hallstatt sword and early La Tène helmets stand out, were probably displayed at the central sanctuary and buried or laid down at special occasions. Fragments of metal and ceramic vessels indicate that these rituals might have involved drinking and communal consumption of food, although there are not such immense accumulations of transport

amphorae or vessels as, for example, at the Arvernian sanctuary of Corent (Poux, 2007).

A re-evaluation of the original excavation plans enables an updated reconstruction and interpretation of local activities. To date, the initial structural phase has been reconstructed as a free-standing four-post building surrounded by a palisade that was only preserved on its western side. However, compared with similar structural relics at Manching and beyond (Scheffzik, 2001; Leicht & Sievers, 2005: 233; Donat, 2006: 144–46; Trebsche, 2010: 62–65), the existing ground plan can also be interpreted as the

central part of a closed building (Figure 7). Its characteristic features – a central four-post structure and surrounding palisade ditch, including entrances on two opposing or adjoining sides – are either interpreted as remains of a special, or cult, edifice or an elevated storage building. In view of the ethnographically attested importance of religious customs involving gifts for yield and welfare and rites of propitiation in agricultural societies, these two interpretations do not exclude each other (Cunliffe, 1992; Hill, 1995). At Manching, the integrating character of a central religious focus – attracting surrounding communities for harvest festivals – might have been symbolized by a temple in the shape of a granary. This interpretation is endorsed by the overall orientation of the sanctuary. In its second phase, with a round *cella* at the centre, an entrance can be detected that faces almost exactly the rising and setting of the sun on 21 March ($88^{\circ}51'$) and 21

September ($87^{\circ}49'$). Together with a free-standing post additionally marking the entrance, the temple might thus have been a symbol structuring the agricultural year by denoting times of sowing and harvesting. Following this initial phase, the local continuity and development of religious beliefs and sanctuaries seems to have been one of the prime movers of urbanization at Manching (Maier, 1990; Sievers, 1991; Fichtl et al., 2002). Its determination of social interaction and intertwined political communication was, thus, dominant from an initial stage of the settlement's genesis – far beyond the building of the Manching rampart.

SOCIAL INTERACTION AND POLITICAL COMMUNICATION

Notwithstanding structural and ideational differences among religious sites such as Manching, their fundamental role as

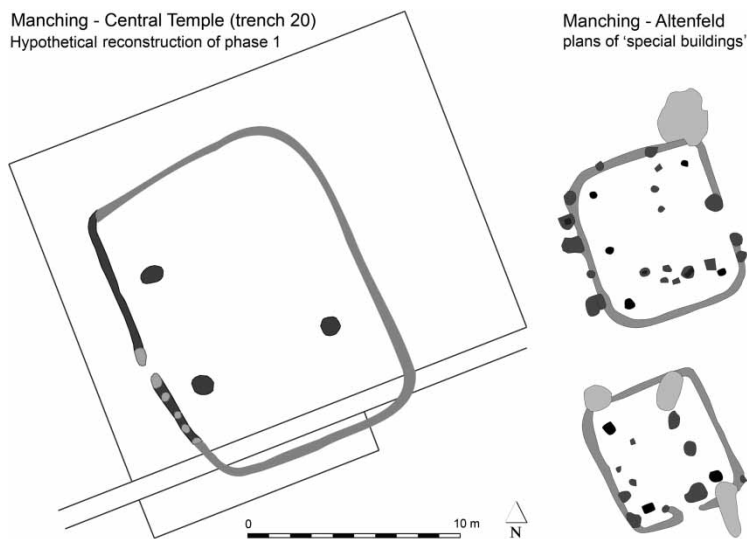


Figure 7. Manching. Hypothetical reconstruction of features of phase 1 of the central temple. Comparison with similar ground plans from Manching's Altenfeld area support its reconstruction as a roofed building.

Image: H. Wendling & RGK.

places of communal ritual activity and feasting sustained social cohesion and identity. Within a fundamentally martial society, war and religion were intrinsically tied to each other and at Manching they became manifest; for example, by depositions of intentionally destroyed weapons (Brunaux, 2004: 90–128; Sievers, 2010a: 108–9). Combinations of a variety of objects like pottery, animal bones (especially skulls of horses and cattle), millstones, iron tools, and weapons were placed in abandoned storage pits and wells (Figure 8). These ‘special deposits’ can be associated with gestures of gratitude, fertility, and propitiation (Cunliffe, 1992). Apart from everyday household ritual activity, elaborate architectural settings such as the aforementioned temple or public places served as religious foci on a more extensive, communal, or intra-societal scale.

On this wider level, religious ritual was a standard medium of social interaction and political communication, serving as a tool for ideological discourse on power relations. Apart from generating common bonds, religious gatherings might have formed the setting for decision-making or at least declaration of decided facts (Peyre, 2000; Fichtl, 2005: 145–52; Poux, 2006).

Thus, the central sanctuary at Manching could also have constituted a focal point for neighbouring communities, initiating a sacral companionship that may eventually have resulted in a profane spatial unification. This decisive act of centralization was, in itself, a highly political measure that demonstrates the existence of well-established political communication – even prior to the proper establishment of the central settlement.

Despite these general interpretative assertions, direct archaeological evidence of social and political activities is scarce. There are a number of cult areas and temples in other parts of the settlement that seem to have existed from a very early time (Schubert, 1994: 186; Fichtl et al., 2002). An enclosure at the *Zentralfläche* dates to at least LT C1 and might have been responsible for the diversion of the main street. Although difficult to date, an area covered with alternating zones of gravel and broken limestone adjacent to the central sanctuary might have served as a place of assembly and communication (Reinecke, 1950: 25; Sievers, 2007: 112–14). The same accounts for public space in general: recent LiDAR scans and geophysical surveys have revealed a complex street pattern that served as a network for



Figure 8. *Manching Zentralfläche. Deliberate and well-structured arrangements of objects – animal and human bones (right), iron implements and weapons, ceramic vessels (left), and millstones – were placed in abandoned pits as ‘special deposits’.*
Image: RGK.

communication and social exchange (Sievers, 2000–2001; Wendling, 2009). In order to promote this public connectivity, leaders deliberately created infrastructural amenities, like a portico following the streets along a rectangular compound in the *Südümgebung* area dated to the transition from LT C1 to LT C2 (around 200 BC) (Schubert, 1994: 186–88).

Although Manching can undoubtedly be termed a political centre, the actual place of political decision-making – that is, the residences of the aristocracy attested in literary sources – can only be deduced vaguely. In other parts of Europe, as in the Treverian territory on the middle Rhine and Mosel rivers, both archaeological and literary sources indicate that members of the local Celtic elite resided in the rural hinterland of urban centres (Metzler et al., 1991). At Manching, wealthy graves in the Steinbichel and Hundsrucken cemeteries document the presence of affluent individuals during the initial phase of centralization. The quality of objects (weaponry, Mediterranean imports, horse gear, and wagon fittings) might suggest that members of the local *nobilitas* actually dwelled within the town (Sievers, 2007: 127). Buildings give an ambiguous picture, with monumental houses covering an area of up to approximately 200 m² in the urban centre (Krämer, 1962: 301). Remarkably, equivalent structures also figure at Viereckschanzen near Manching. Large post-holes forming a 13 × 7 m central building, traces of other dwellings, ditches and negative features figure at a Viereckschanze at Westenhausen, approximately 2.7 km northeast of the *oppidum* (Irlinger, 1994: 286–87, Figure 2b). Considering the size of buildings and monumentality of banks and ditches, these rural sites can be interpreted as residences of a predominantly agricultural aristocracy. Caesar refers to these farmsteads in the

Helvetian *civitas* as *privata aedificia* (Caesar BG I 5,3; Kaenel & Martin-Kilcher, 2002: 155). Accordingly, and with reference to Roman or medieval analogies (Wendling, 2010a: 339), the compounds in the urban centre can be construed as urban dependencies, or *aedificia urbana*.

TRADE AND CRAFTS AS PREREQUISITES FOR AND CATALYSTS OF URBAN EVOLUTION

Both early unfortified centres, like Manching, and most of the fortified *oppida* of the later second century BC were distinctly separated from their environment in terms of economic activities. Trade played a major role even before the establishment of closer links to the Mediterranean, with mineral resources of the Manching hinterland driving the prosperity of the open settlement. Indications of an occasional influx of goods and ideas might be related to individual contacts and demographic movements. Early coins at Manching and beyond, as well as outstanding objects like an iconic golden tree, represent an early stage of communication with the Hellenistic world. From about 200 BC, there was a fundamental intensification of contacts. Graeco-Italic and Dressel 1 amphorae and Italic bronze and glass vessels are the most frequent indicators of long-distance trade. This could show that the earlier open settlements – as urban centres in their own right – were a prerequisite for institutionalized trade with Rome and Greece, rather than their direct consequence. The aristocratic founders or political and economic initiators of these early focal points might therefore have been more concerned with intra-Celtic exchange and the regional concentration of agrarian and mineral resources from their own territories than with participating in long-distance trade (Wendling, 2010a:

336–37). From this perspective, the trend towards urbanization emerged from within Celtic society and was subsequently fostered by interest from Mediterranean traders in the markets of temperate Europe. At Manching, engagement in regional and long-distance trade indicating the settlement's urban character is seen as early as LT C2, long before the construction of the *murus Gallicus*.

A similar development can be observed in the establishment of craftsmanship and economic services. Not only can specialized pottery production with wheel-turned high-quality products be identified in LT C, but there is also evidence of well-established metallurgy with

its different specialized dimensions in copper and iron working in LT C2. Traces of a smithy, slag, and smelting residues are coherently concentrated along the southern fringe of a rectangular LT C2 compound at the *Zentralfläche*. A particular branch of metallurgy is represented by the minting of coins. The earliest evidence of Celtic monetary production can be identified in the third century BC, possibly influenced and initiated by a reflux of Mediterranean money brought back by Celtic mercenaries. Local coinage seems to have been minted from these early times (Kellner, 1990: 10–11, 30, 32, 38). There is also a considerable accumulation of coin moulds

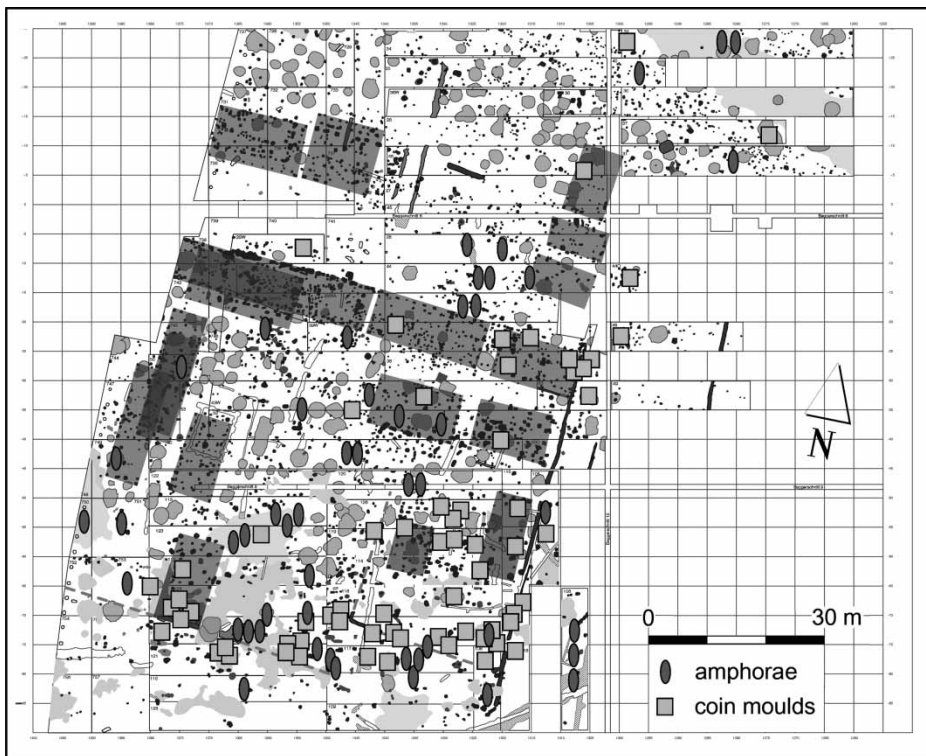


Figure 9. *Manching Zentralfläche.* Reconstructed ground plans and ditches embrace a rectangular area where coin minting and long-distance trade played a significant role, as suggested by the distribution of amphorae and coin moulds.

Image: H. Wendling.

along the edges of the Middle La Tène enclosed area (Figure 9).

Specialized glass-working and the production of glass bracelets and beads seem to have been carried out by highly skilled specialists in Manching from the early phases of the settlement, that is, from the beginning of LT C1 at around 300 BC (Gebhard, 1989: 181–85). Jet and lignite jewellery, the raw material being imported from as far afield as southern England, seems to have been produced locally at the same time. Raw amber was also obtained from Baltic sources and processed at the unfortified centre.

It can be argued, then, that economic initiatives played a major role in the urbanization of Celtic society. According to our quantitative model, an additive value of the number and diversity and thus the intensity of economic activity seen archaeologically can serve as an indicator of a settlement's urban status. Figure 10 lists the accumulation of these economic

traces – i.e. presence of traded goods, different crafts, coin minting – at Manching and three contiguous sites: the unenclosed centre of production and distribution at Berching-Pollanten; the *oppidum* of Kelheim (Bavaria); and at a rural farmstead at Nordheim (Baden-Württemberg). In spite of a certain chronological uncertainty, the data reveal a qualitative pre-eminence of the Manching settlement. An early involvement in long-distance communication and accumulation of prestigious goods is an outstanding feature compared with neighbouring and slightly later sites like Berching-Pollanten (Schäfer, 2010: 232). The farmstead at Nordheim serves as a representative example for sites in a rural environment: evidence of specialized industries is absent, whereas limited metallurgical activities satisfied the local demands of an agricultural facility. Although salt production at this rural fortified farmstead reveals a sophisticated specialization, it did not evoke any

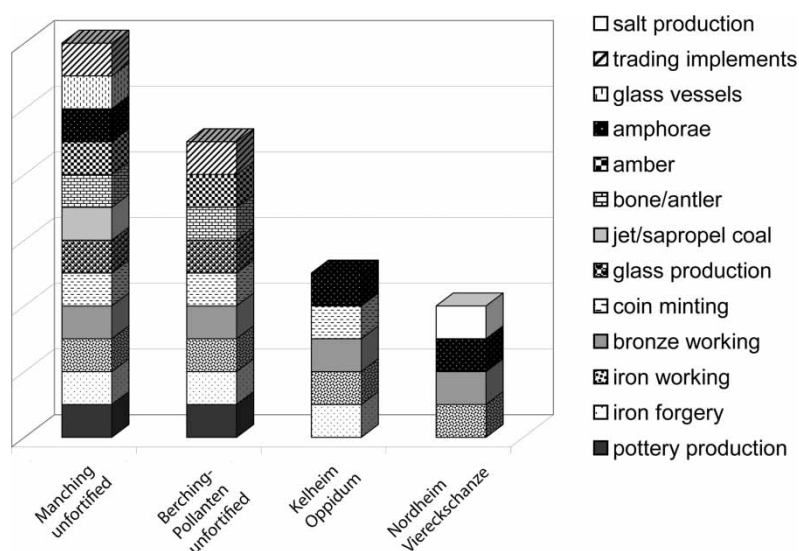


Figure 10. The number and diversity of crafts and trading activities at four La Tène settlements, indicating the degree of their urban development or 'rural' status.

Image: H. Wendling.

further functional diversification (Neth, 2002: 82).

URBAN BUILDING: ARCHITECTURAL CONTINUITY AND DIFFERENTIATION

Apart from the first phase of the central temple, the earliest remains of buildings at Manching date to the LT B2/LT C1 transition, in the first half of the third century BC. At this time, the *Steinbichel* cemetery had been abandoned, whereas the *Hundsruken* necropolis was still in use. Objects dating to this period concentrate in the northern part of the *Zentralfläche* (Figure 1). Only one small building dating to LT B2/C1 has so far been identified. Its position at the roadside of one major traversing line indicates that this major road must have been in existence at this early time. Its course remained unchanged until the first century BC, making it one of the most important signs of continuity in the local urban context. Towards the second half of the third century BC, a major spatial expansion of the settlement occurred. It exceeded the limits of the *Zentralfläche* and extended into other major excavation areas, such as the *Südumgehung* and the *Nordumgehung* (Gebhard, 1989: 183–85).

At the *Zentralfläche*, during the transition from LT C1 to LT C2, a major architectural programme that shows many signs of a planned urban layout appears to have been implemented. Unfortunately, later building activity has mostly destroyed evidence of buildings of this early phase at the northern end of the excavated area. In this area, settlement organization might have followed a rather irregular direction, taking account of the curved line of the traditional street that provided fixed plots. However, behind the small houses and plots along the

road, pit alignments dug during LT C2 reflect boundaries of rectangular yards and compounds. Equivalent lines of pits are visible in the adjacent geophysical survey, indicating a well-established urban layout that imitates rectangular enclosures that are known from contemporary farmsteads – for example, at Bopfingen (Baden-Württemberg) (Krause & Wieland, 1993). As such, the structural similarity of rural enclosures and these homesteads in an urban context might foster their interpretation as dependencies of the neighbouring rural aristocracy investing in urban economy – that is, in crafts and trade (Wendling, 2010a).

By analogy to similar features at sites in France, Austria and the Czech Republic, a rectilinear ditch at the eastern edge of the excavation area is interpreted as a sanctuary determining the overall direction of the settlement organization (Figure 11). The adjoining street respects the place of the sanctuary, indicating that the latter was based on even older traditions, although finds here so far only go back as far as LT C1. The buildings in the south take up the alignment of this sacred area. This clearly demonstrates its ideological importance for the settlement's structure and documents the influence of religious and cosmological thought on urban planning.

A large rectangular area in the south is delimited on its northern side by several multi-phase buildings and towards the east and south by a small ditch of a palisade enclosure (Krämer, 1962: 298). Within these boundaries, there are several other multi-phase buildings taking up the same orientation. Unfortunately, they cannot be convincingly assigned to specific functions or activities. Although some context-related chronological uncertainties remain, a correlation of building layouts and certain categories of finds permits

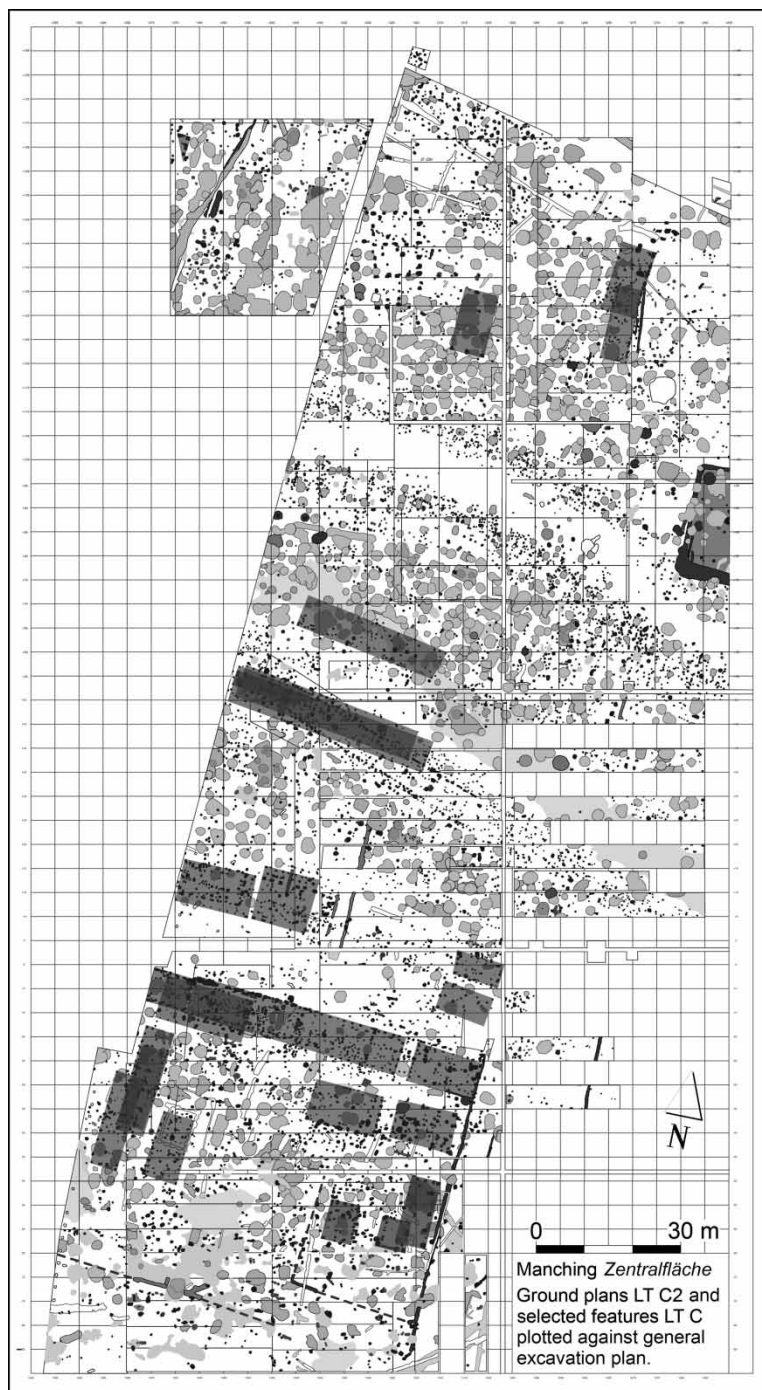


Figure 11. *Manching Zentralfläche. Consistent orientation of buildings and density of roofed space in LT C2 suggest a considerable degree of urbanization prior to the fortification of the oppidum.*
Image: H. Wendling.

further interpretation of the complete complex.

Mediterranean imports, such as amphorae, and coin moulds representing monetary activity, follow the edges of the rectangular area and give a clear sense of trade and high status metallurgy as important features of this specially delimited area (Figure 9). Elongated buildings on the northern and western fringe could therefore have served as storage facilities for goods and raw materials. Accordingly, these structures might have been deliberately set out for trading activities similar to an *emporion* in a Greek *polis* – that is, a market place reserved for foreign trade (Bresson & Rouillard, 1993; Hansen, 2006: 25, 31). As such, the southern enclosure may have served as a fenced-off and clearly separated space for economic exchange and communication imitating or influenced by Hellenistic *emporia* or *agorae*.

Residues of iron slag on the southern fringe seem to have been accumulated from LT C and suggest that the same area was open to other crafts closely connected to numismatic metallurgy. Such a comprehensive economic activity would undoubtedly have been conducive to a steady accumulation of wealth and power. Local elites residing in the hinterland could have promoted and initiated these economic activities and may have taken up residence within or near to the commercial centre. In this respect, the overall amount of amphora fragments may indicate more than simple trade connections. As a prestigious demonstration of wealth and power, consumption of wine is frequently related to Celtic religious activities and feasting (Poux, 2007). Again, high status individuals played a prominent role in sacred rituals that promoted social cohesion and aristocratic domination. Ancient literary sources, such as Caesar's accounts of his military

campaigns, explicitly state that the Celtic nobility gained much of their influence from religious, economic, and military occupation (for example, Caesar, BG I 18). Manching might be compared with sanctuaries in northern and central Gaul, where libations, depositions of amphorae, and coin production were inseparably entangled. As yet, there are no traces of corresponding special buildings that might be unequivocally interpreted as a temple.

Variation in ground plans of buildings at Manching compared with those of smaller settlements adds to the notion of a highly developed urban character (Figure 12). There is a multitude of house forms: from narrow, elongated constructions; small economic and storage facilities; to monumental residences. In spite of standardized categories of house forms, such as two-span or tripartite buildings, variability in building size is a further indicator of functional and social diversity. In other settlements and contexts, buildings are often limited to one or two standard house forms of similar size, which serve as indicators of the degree of urban variation. Cluster analysis of house size compared with house form, represented by an index of length and width, reveals distinctive zoning¹. With a high variability, large and elongated buildings dominate at Manching during LT C2, while smaller and more standardized house forms are common at 'rural' sites in adjacent regions. The cluster around square forms of moderate size (with length to width ratios of approximately 1:1) indicates four-post granaries, matching the agricultural bias of these settlements. A set of approximately rectangular and large-sized buildings at

¹The data will be presented in full in the comprehensive archaeological analysis of the *Zentralfäche*-excavations, which will be published in the monograph series 'Ausgrabungen in Manching' (Wendling, in preparation).

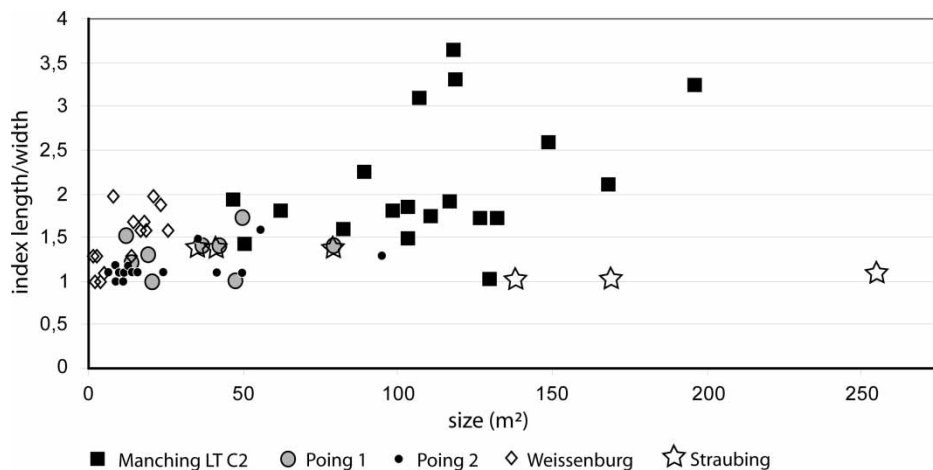


Figure 12. Cluster analysis of house form (length–width) and building size (m^2) of several La Tène settlements or settlement phases. The diversity of Manching LT C1/C2 building structures and relative uniformity of other sites allows for a plausible distinction between contemporary ‘urban’, ‘rural’, and ‘special’ sites.

Image: H. Wendling.

Straubing is suggestive of a distinctive, possibly religious function. At Manching, the creation of a multitude of infrastructural amenities, from simple wells to complex street grid to public buildings, such as sanctuaries and temples, clearly shows that the unfortified settlement exhibited all aspects of an urban centre from a very early stage.

Topographical closeness and density of built-up space further denotes an urban character for the Manching settlement that was markedly different to contemporary and later rural settlements. Quantification of built-upon ground compared with the overall excavated area serves as an indicator of the degree of urban compression. In the southern part of the *Zentralfläche*, the ratio ranges between 0.15 and 0.23, depending on the identification of contemporaneous buildings and whether public space (i. e. streets and squares) is integrated. At the hamlet of Poing, quantifiable

densification of roofed space does not exceed 0.02, while a nearby late La Tène village is more densely settled, with a value of 0.04. The index of built space in relation to excavated area at Weissenburg is at a similar level (0.02), whereas in a special area at Straubing it amounts to 0.13 – almost reaching the urban level of Manching. This high value, together with distinctive house forms, supports an interpretation of the Straubing site as a special, possibly religious area. The comparative data indicate that the degree of densification at Manching significantly exceeded relatively open structured settlements.

MANIFESTING URBANITY: THE CONSTRUCTION OF THE RAMPART

A fortification has generally been considered as an indispensable characteristic of a late Iron Age *oppidum* (Boos, 1989:

56, 71; Woolf, 1993: 224–25). The latter has been regularly equated with a town, while the fortification has implicitly been regarded as an urban feature that could easily be identified archaeologically (cf. Collis, 1984; Boos, 1989: 72; Fichtl, 2005).

Regarding aspects of enclosure and fortification, Manching leads us to question these prevailing concepts. Although the settlement was fundamentally urbanized at the transition of LT C1–LT C2 (around 200 BC), the Manching rampart was only erected towards the final decades of the second century BC. The significance of its construction has generally been overestimated and was actually just another step in the development of the town, rather than a decisive act of foundation. Still, archaeological verification of the limitations of the urban space prior to the fortification is difficult. At a contemporary centre at Roseldorf in Lower Austria, a surrounding ditch can be interpreted as a modest demarcation of the settlement area (Holzer, 2007: 396). At Manching, ditches that run roughly parallel to the later rampart indicate an older separation of the settlement area by a palisade. A ground-penetrating radar (GPR) survey near the south-western rampart has provided additional evidence of a ditch covered by the internal embankment of the rampart that might represent an older boundary (Figure 13) (Wendling, 2009). It is difficult to adequately assess the character of such an enclosure. A palisade sufficiently constrains external assault and at the same time symbolically separates the urban core from the outside world (Bowden & McOmish, 1987). Correspondingly, at the level of private property was a separation deliberately materialized by clearly delimited compounds or urban dependencies. This similarity between internal and external symbolism and practice might also support the interpretation

of a deliberate act of concentration and centralization, initialized by local and surrounding landowners. Members of a horizontally organized elite might have expressed their communal domination over the newly established urban centre by symbolizing restricted access to the market and religious centres of the settlement. Thereafter, the decrease in cultivable land together with a growing urban population might have fostered a more substantial separation (Thomas, 1997).

The construction of the rampart around 140 to 120 BC literally petrified this separation and turned the symbol into a monument. The outward appearance of a gleaming white limestone revetment and a massive internal ramp epitomized the community's economic and military power to the outside, but also to the inside world. The stimulus for such an unprecedented effort is unclear. Contemporary events, such as the Celto-Germanic migration of the *Cimbri* and *Teutones*, have been suggested as influences (Collis, 1984: 23; Sievers, 1999: 16, 2007: 105). However, the quality and technical expenditure suggests further ideological causes for its execution (Buchsenschutz et al., 2010: 298). Celtic mercenaries would have been acquainted with Mediterranean military architecture. At some places, such as Syracuse and Tarquinia in Italy and Messene in Greece, town walls surround several smaller settlements or complete landscapes, potentially representing a prototype for the Celtic town at Manching (Miller, 1995: 340–42; Zick, 2008). Here, the rampart incorporates an abandoned channel of the Danube, swampy areas and a prominent elevation on the western fringe, possibly comprising a fortress or special area (Krämer & Schubert, 1970: 57–59). Even the characteristic architectural layout of the *murus Gallicus* may be traced back to Hellenistic examples, showing a comparable technique of

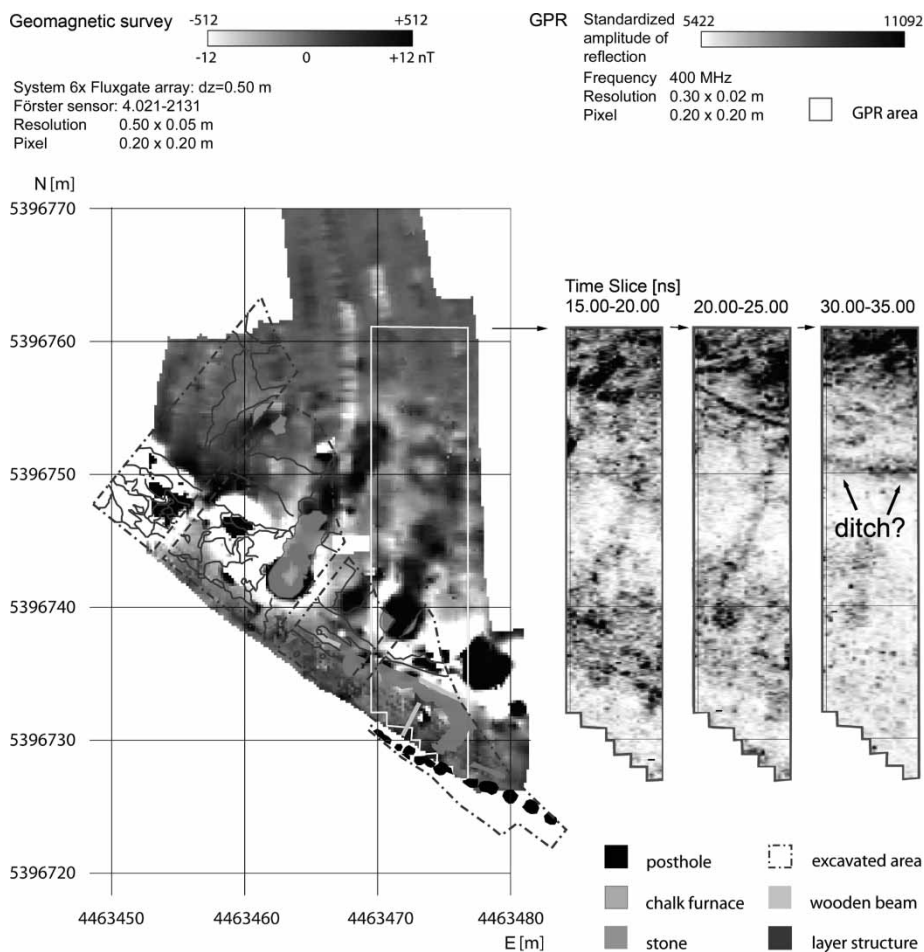


Figure 13. Manching. Plan of a south-western section of the fortification, combining data from excavation, geomagnetic survey, and GPR. A linear anomaly below the LT D1 rampart might indicate a preceding, less substantial, delimitation of the settlement.

Image: H. Wendling & RGK. After Köppen and Leicht (2010: Figure 106).

framing involving header and stretcher ashlar masonry (Winter, 1971: 81; Karlsson, 1994: 149–52; McNicoll, 1997: 26, 77). Wolfgang Dehn, doyen of *oppida* studies, suggested the rampart backing the front *mur* might have been derived from Italic *agger* constructions of the type identified at sites such as Veii, Rome, and Palestrina (Dehn, 1961: 390, 396; Miller, 1995: 13–14, 343, 356, 384; Sievers, 2010b: 185). He further remarked that prototypes of late La Tène gates with

in-turned flanks, so-called *Zangentore* or pincer gates – a form unusual in Central European prehistory, figure in Italian and Greek fortifications of the fourth and third century BC – for example, at Syracuse, Lentini, and Tyndaris (Dehn, 1961: 390, 395–96; Miller, 1995: 17, 201, 255, 274, 277; Fichtl, 2005: 74). Still, as the Manching example appropriately documents, these formal adoptions do not imply a complete appropriation of a pre-existing Mediterranean urban concept

(Dehn, 1961: 395). As in other fields, such as numismatics and art, architectural examples were absorbed, rearranged, and executed in an indigenous Celtic fashion.

Recent excavations at Manching have revealed great variability in rampart construction techniques, either being determined by natural topographical conditions or representing separate zones of architectural planning and building (Köppen & Leicht, 2010; Sievers, 2010b; Wendling, 2010b). The number of longitudinal wooden beams used for the rampart construction varies from two to four in different segments of the fortification. Similarly, the height and width of the front wall and the technical execution and complexity of the inner rampart or *agger* reveal variable strategies of planning and building. This might have derived from social competition of different families or clans trying to contribute to the communal effort with a more elaborate and valuable part. The higher the rampart, and the more complex the filling of the rampart and the construction of the wooden framework of the *murus*, the more prestigious the whole undertaking might have been perceived. Investment of labour and manpower – a kind of conspicuous consumption of labour – may have played a major role in representation and social rivalry among members of a local elite. Certainly, constant social competition and contest within the Gaulish aristocracy and the acquisition of *clientela* and supporters are frequently mentioned in Caesar's accounts (Caesar, BG I 4.2, I 5).

The enduring importance of religious belief in urban planning is also attested by the general layout of the Manching rampart. Almost perfectly round in shape, it could have reflected a cosmological layout and materialized a metaphysical concept of the world in an enduring form. Similar phenomena are documented in a variety of other cultures.

Notions of symmetry and centrality of settlements are widely present in ancient Greek philosophy and urban planning and might have given another impetus to Celtic urbanization (Lagopoulos, 2009; Vaginay, 2012). A significant coherence between the course of the rampart, the setting of its gates, and the position of the central sanctuary has been detected by S. Sievers: a conjunction of the latter and the southern and eastern gate produces an equilateral triangle, which in turn confirms the prevailing importance of the temple in the town centre (Eller et al., 2012). The sanctuary certainly occupied a similar cosmological position as the *omphalos* or *axis mundi* in the Greek or Latin perception of the actual and transcendent world (Lagopoulos, 2009: 194–200). The ideological necessity of rampart construction was enforced, irrespective of topographical constraints, and significantly altered the natural environment. The entire southern periphery of the town, with small streams flowing through swampy meadows, was rearranged. Two small watercourses were diverted to form an additional obstacle in front of the rampart and also to gain more usable land to graze cattle and create fields (Peters & Sievers, 2002). The expansion into the southern areas gave even more space to the growing community, which in turn made it necessary to produce more surplus from the hinterland to sustain an increasing population. Ultimately, the construction of the rampart was only another step in the development of the town and was based on traditional patterns and beliefs. However, the necessary investment of labour and economic power implies that, around the turn of the second to the first century BC, Manching had reached a climax in social and political complexity – only now to be termed *oppidum* in a strict sense.

MANCHING AS AN *OPPIDUM*

During the early years of the massive defensive system, a further intensification in foreign trade can be seen, with Dressel 1 *amphorae* representing the dominant stock of imported vessel types (Lyding Will, 1987: 33–36). Hellenistic black-glazed pottery from Campania or Etruria gives further evidence of continuing long-distance exchange. In fact, institutionalized trade, more than exchange, is suggested by lead weights and scales for weighing coins and precious metals. Regular contacts with the Mediterranean certainly promoted the adoption of writing as a means of communication both among traders and the elite. Evidence is scarce, but writing could be considered far more common if perishable organic material was used for inscriptions and written information. Bronze frames of writing-tablets from the Czech *oppidum* at Stradonice and a bone *stilus* from Manching are only faintly suggestive of the number of writing implements circulating at urban centres (Krämer, 1982; Schubert, 2001: 54–55). At Manching, a number of ceramic vessels bear inscriptions, the majority of which can be read mostly as numerals or signs of ownership. Mostly dating to LT D, they might be taken as further evidence of intensified contacts, a cosmopolitan spirit and development towards regularized interregional social exchange, at a time of advanced urban and defensive monumentality.

The ostentatious defensive works were accompanied by a restructuring of the internal settlement layout (Eller et al., 2012: 310, 313). At the transition from LT C to LT D, the orientation of buildings and associated enclosures was slightly turned towards an eastern direction, and the major southern rectangular enclosure was abandoned. In this area, several smaller agglomerations of buildings and compounds suggest a subdivision of plots

and property. A restructuring of linear sequences of storage and refuse pits in the northern part indicate a division into enclosures that reorganized economic and housing facilities. At the centre of the *Zentralfläche*, long storage buildings were demolished and equivalent edifices were built along a new or redirected street which roughly followed an ancient dried-out watercourse. Iron and bronze working can be identified in so-called *Grubenhäuser*, or pit houses. Apart from a proper crafts quarter in the *Altenfeld* area, which stretched far along the northern fringe of the central part of the settlement, these craft-related structures indicate a somewhat even distribution of craft activities throughout the settlement (Sievers, 2002: 944; Wendling, 2009: 56). Pit alignments and palisade ditches separated a considerable number of urban estates of wealthy members of the Celtic elite, serving its need for specialized production and for acquisition of prestige goods by long-distance trade. The nature of this internal reorganization presupposes a decisive effort, presumably as a reaction to external threat (Sievers, 2010a: 130–32). It is debatable whether this was coped with communally or rather achieved through the cooperation of segregated groups or individuals, as might be indicated by the structural subdivision of the plots or by the sectional building of the rampart.

The time- and wealth-consuming reconstruction of the rampart, using a traditional indigenous technique of a front structured by vertical beams (*Pfostenschlitzmauer*), indicates that the community at Manching was able to maintain and even enhance their economic prosperity at the beginning of the first century BC (an event broadly determined by a dendrochronological date of 105 ± 6 BC; van Endert, 1987: 70). The dominance of the urban core seems to have grown and even outrivalled adjacent settlements like Berching-

Pollanten, which was abandoned around the time when Manching was fortified (Schäfer, 2010: 222, 233).

While Manching experienced further economic ascendancy, contemporary centres of the Nēmčice/Roseldorf type did not take the step from an undefended urban centre to a massively protected *oppidum*. The reason for this supra-regional phenomenon is obscure – Manching seems to be a special case, possibly related to its eminent role as the major junction between the Celtic east and west. In the first century BC, the *oppidum* of Manching stands alone in its exceptional concentration of urban traits.

URBAN DECLINE

A secondary reconstruction of the rampart in a third phase attests potential for further growth, while conspicuous traces of economic and structural decline increasingly emerge. Around 80–70 BC, the major influx of southern imports ceased and a reduction of metal supply can be observed (Lyding Will, 1987: 36). In the crafts quarter, bronze and iron cauldrons and other waste objects were dismantled and recycled (Leicht & Sievers, 1999). The proportion of graphite in a characteristic pottery produced at Manching progressively diminished, indicating problems in resource procurement from mineral deposits approximately 200 km to the east (Gebhard & Wagner, 2000: 175; Gebhard et al., 2004: 209–10). The density and size of dwellings diminished with only a thinned out occupation visible in the archaeological record (Wendling, 2010a: 343–44).

These signs of change and dissolution have frequently been attributed to external political impacts. The reconfiguration of mechanisms of contact and communication in the course of Roman expansion in Gaul, northern Italy and Illyria

inevitably altered Manching's position as an economic node connecting western Celtic territories and predominantly Boian territories in the Celtic east. Further Germanic intrusions additionally contributed to political instability and economic decline (Fichtl, 2005: 181–83). The effects of famines and plagues, which have only recently been proposed as major factors in an urban crisis, must not be underestimated (Rieckhoff, 2002).

External factors profoundly contributed to social and economic dynamics, while internal stress might also account for some phenomena indicative of social and economic unease. Among these, a diminishing potential to sustain a large-scale specialized community by means of external subsistence supply can be substantiated archaeologically. Historical and ethnographic analogies support the assumption that the fragile economic and social network of the urban core and its rural hinterland might have become unbalanced (Lang, 1993).

It is more difficult to discern internally triggered social conflict. This might have evolved from social fragmentation caused by laws of succession and continuing processes of inheritance. Apart from the subdivision and parallel accumulation of arable land, increasing social inequality at the family level has been argued to be one of the fundamental consequences of inheritance (Cole & Wolf, 1999; Karl, 2004). Ethnography offers examples of the fragmentation of societies as a consequence of social and economic antagonism of principal heirs and a mass of neglected relatives (Cole & Wolf, 1999; Wendling, 2010a: 329–37, 2012: 248–49). Similar to these ethnographic examples, an increasing separation of settlement units, reduced habitat density, diminishing building sizes, and a potentially widening gap between ostentatiously displayed wealth on the one hand and declining economic potential on

the other might exhibit corresponding disruptive phenomena at Manching. Coin deposits and caltrops might illustrate the effect of internal conflict caused by economic inequality and pressure.

During its third phase, the eastern gate at Manching fell prey to a devastating fire and was not rebuilt again (van Endert, 1987: 67, 91). After this, the urban community was evidently incapable of launching another prestigious communal project. Any investment of wealth and labour would have failed due to a lack of agricultural surplus and also demographic constraints. The destruction of the gate and the subsequent cutting-off of the important road along the Danube metaphorically depict the end of communication, which, from the beginning of Manching's history, was of fundamental importance for the establishment of urban life. Captured in a state of isolation and economic seclusion, the decline of the *oppidum* of Manching presaged the final collapse of pre-Roman urbanism in eastern Celtic Europe.

CONCLUSION

The Iron Age site of Manching has gained an almost paradigmatic status in prehistoric archaeology, both in functional and chronological terms. As a massively fortified *oppidum*, it has become one of the key sites concerning questions of economic and social development and urbanization in pre-Roman temperate Europe. The urban status of the site has been thoroughly connected with the term *oppidum* and an underlying concept of the Celtic town.

In this article, reconsideration of the archaeological evidence and its integration into a recently established model of urban growth helps to evaluate the changing degree of urbanism at Manching. The

middle Iron Age centralized site evolved from a nucleation of Late Hallstatt/Early La Tène settlements and *Herrenhöfe* which were rather equidistantly distributed across the landscape.

In LT B2/C1 there are marked signs of a concentration of population in the northern part of the *Zentralfläche* excavation area. Other finds from this period figure at a nearby special area that is convincingly interpreted as a temple, presumably associated with agricultural or harvest ceremonies. Together with other sanctuaries, cult implements and offerings in abandoned storage pits and wells, the central temple indicates the key role of religious thought and institutions both in everyday life and in social communication. The initial establishment and focal position of the temple also indicate its fundamental importance for urbanization.

The archaeologically detectable characteristics of urban degree – continuity, degree of social interaction, spatial densification, variation in building structures, and economic diversity – all suggest a complex and highly urbanized community at Manching in LT C2. In all aspects, the urban centre far exceeded contemporary rural settlements but also other neighbouring sites which were predominantly involved in crafts and trade. Whereas at Manching the construction of the massive fortification at the transition from LT C to LT D implied another intensification of urban traits, other similar centres of production and exchange in the eastern Celtic territories were abandoned. Manching and its ruling class outrivalled competing settlements and communities and were able to gain even more wealth and status through long-distance contacts and ostentatious display of communal power through the construction of the rampart. Decision-making and political and military power were executed by an elite that implemented symbols of agricultural wealth – rectangular

enclosures evoking farmsteads – into the urban structural concept. Prestigious architecture features both at their rural residences in the Manching hinterland and at their urban branches, focusing on trade and crafts.

Ethnographic evidence might suggest that the initial foundation and further growth of the Central European towns was a result of intra-Celtic social fragmentation. As a consequence of inheritance, marginalized parts of society might have been deliberately settled to prestigiously support their inheriting and ruling relatives. Whether this increasing creation of an urban social substratum progressively led to social disequilibrium and conflict is a matter of debate. In any case, signs of decline and the final abandonment of the *oppidum* reveal that the concept of urbanism, although in effective operation for more than 200 years, could not cope with internal social strain and external political and economic pressure.

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BIOGRAPHICAL NOTE

During his studies at the University of Tübingen and at the Institute of Archaeology, UCL, Holger Wendling developed a strong interest in the archaeology and history of the Iron Age of temperate Europe. His doctoral thesis dealt with the late La Tène site at Breisach, Münsterberg, and with the settlement archaeology of the upper Rhine region. While pursuing these studies, he conducted excavations

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Manching revisité: dynamiques d'occupation et urbanisation en Europe centrale durant l'Âge du Fer sous une nouvelle optique

Les recherches concernant les sociétés de l'Âge du Fer récent en Europe centrale se sont traditionnellement concentrées dans une certaine mesure sur les grands sites fortifiés ou oppida se classant vraisemblablement tout en haut de la hiérarchie de l'installation celtique. D'un point de vue chronologique et fonctionnel, l'oppidum de Manching en Haute-Bavière a été considéré dans le passé comme exemple paradigmatique de l'urbanisation transalpine préromaine. Cependant aussi bien sa datation que son emplacement topographique dans une zone inondable peu profonde du Danube justifient une distinction des 'villes' fortifiées contemporaines ou successives. Des études récentes ont pu identifier un autre type particulier d'installation, à savoir de grands centres commerciaux et artisanaux non fortifiés, comme éléments principaux de l'urbanisation préhistorique. En même temps, Manching et ses stades préfortifiés de développement urbain révèlent un plan caractéristique de l'évolution de l'occupation celtique orientale qui finalement rompt avec un développement standard au moment de la construction d'un rempart massif. Un modèle flexible d'évolution urbaine a été élaboré en se fondant sur les recherches récentes à Manching et dans son arrière-pays et en tenant compte du caractère dynamique de l'urbanisation. Ce modèle tient compte d'une notion comparative et quantifiable de degrés variables de statut urbain local et supra-régional. Translation by Isabelle Gerges.

Mots clés: Âge du Fer, urbanisation, dynamiques d'occupation, communication, architecture, configuration urbaine, densité géographique

Manching auf dem Prüfstand: Eine neue Sicht auf Siedlungsdynamik und Urbanisierung im eisenzeitlichen Mitteleuropa

Bis zu einem gewissen Grad konzentrierte sich die Forschung zu eisenzeitlichen Gesellschaften Mitteleuropas traditionell auf befestigte Großsiedlungen oder oppida, die anscheinend an der Spitze der keltischen Siedlungshierarchie standen. Das oppidum von Manching in Oberbayern diente in

chronologischer wie funktionaler Hinsicht als paradigmatisches Beispiel der transalpinen vorrömischen Urbanisierung. Allerdings erlauben sowohl seine Datierung als auch seine Lage in der flachen Donau-ebene eine Unterscheidung von gleichzeitigen oder jüngeren befestigten ‚Städten‘. In jüngeren Studien wurden große unbefestigte Handwerks- und Handelszentren als weiterer spezifischer Siedlungstyp und maßgeblicher Faktor der vorgeschichtlichen Urbanisierung identifiziert. Wiederum zeigen die vor-befestigungszeitlichen Phasen der Manching Stadtentwicklung ein charakteristisches Schema der Siedlungsgenese, das sich, sobald das Zentrum von einer massiven Mauer umgeben wird, jedoch zu einem Spezialfall wandelt. Unter Berücksichtigung jüngster Forschungen in Manching und seinem Umland sowie des dynamischen Charakters der Urbanisierung wurde ein variables Modell der Stadtwerdung entwickelt. Es ermöglicht eine vergleichend-quantifizierbare Einschätzung des wechselnden Ausmaßes urbaner Ausprägungen im lokalen und überregionalen Raum.

Stichworte: Eisenzeit, Urbanisierung, Siedlungsdynamik, Kommunikation, Architektur, Stadtgliederung, räumliche Dichte