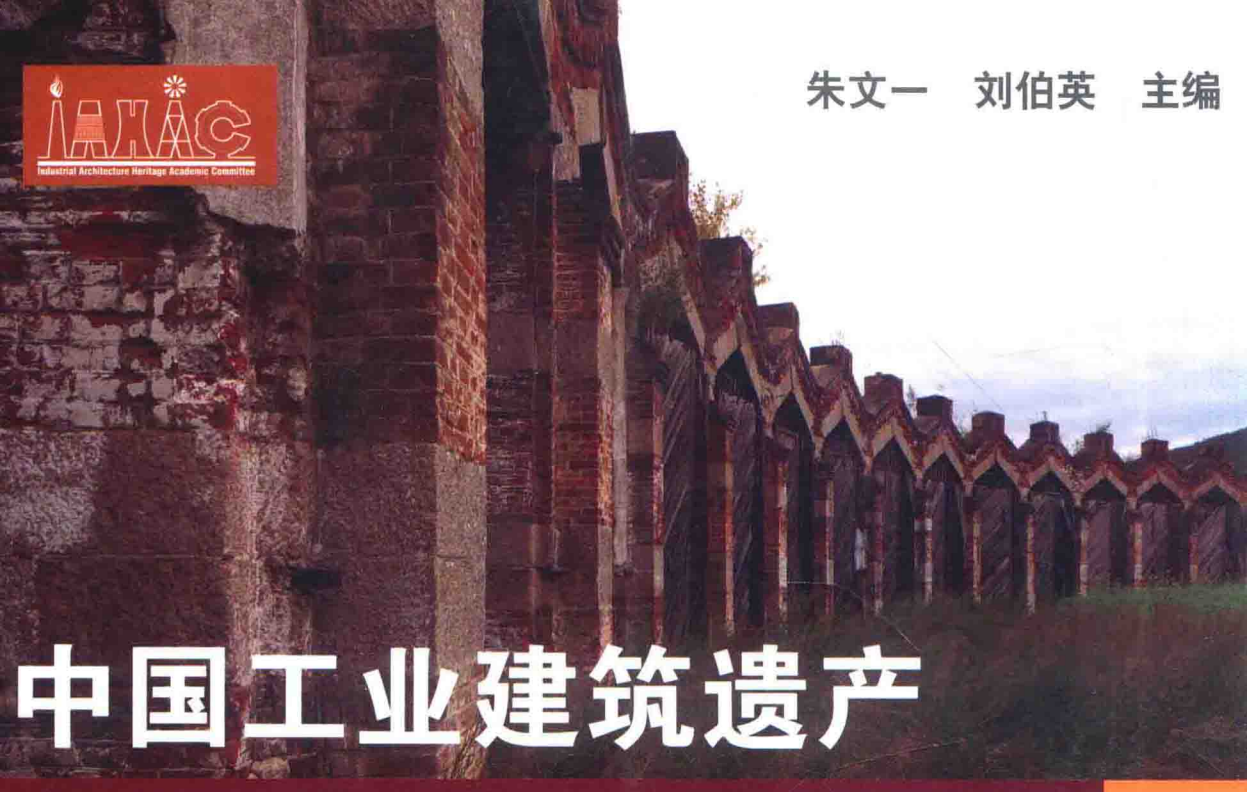

朱文一　刘伯英　主编

中国工业建筑遗产调查、研究与保护（四）

2013年中国第四届工业建筑遗产学术研讨会论文集

清华大学出版社

中国工业建筑遗产调查、研究与保护
(四)

2013年中国第四届工业建筑遗产学术研讨会论文集

朱文一　刘伯英　主编

清华大学出版社
北京

图书在版编目(CIP)数据

中国工业建筑遗产调查、研究与保护：2013年中国第四届工业建筑遗产学术研讨会论文集. 4/朱文一，刘伯英编著. --北京：清华大学出版社，2014

ISBN 978-7-302-36902-8

Ⅰ. ①中… Ⅱ. ①朱… ②刘… Ⅲ. ①工业建筑－文化遗产－学术会议－中国－2013－文集 Ⅳ. ①TU27-53

中国版本图书馆CIP数据核字(2014)第131436号

责任编辑：周莉桦
封面设计：常雪影
责任校对：王淑云
责任印制：沈　露

出版发行：清华大学出版社
网　　址：http://www.tup.com.cn，http://www.wqbook.com
地　　址：北京清华大学学研大厦A座　　邮　　编：100084
社 总 机：010-62770175　　邮　　购：010-62786544
投稿与读者服务：010-62776969，c-service@tup.tsinghua.edu.cn
质量反馈：010-62772015，zhiliang@tup.tsinghua.edu.cn
印 装 者：北京嘉实印刷有限公司
经　　销：全国新华书店
开　　本：185mm×260mm　　**印　　张**：35.25　　**字　　数**：786千字
版　　次：2014年7月第1版　　**印　　次**：2014年7月第1次印刷
定　　价：88.00元

产品编号：059582-01

序

亚洲工业遗产中国台北宣言

2012 年 11 月 5 日至 11 月 8 日，国际工业遗产保存委员会（TICCIH）在中国台北举行大会，这是 TICCIH 第一次将例行大会移至亚洲城市举行，彰显了这个国际组织对于亚洲地区日益受到威胁的工业遗产的关注。经过了四天的议程，与会代表一致认为通过一个以亚洲工业遗产为主轴的宣言，以推动该地区工业遗产的保存维护是十分适切且有必要的。

第一条

本宣言认知联合国教科文组织（UNESCO）通过的《世界遗产公约》、第二届历史建筑专家及建筑师会议通过的《威尼斯宪章》、国际文化纪念物及历史场所委员会（ICOMOS）历年来所通过的文化遗产相关宪章和宣言、国际工业遗产保存委员会（TICCIH）通过的《下塔吉尔宪章》、ICOMOS 与 TICCIH 通过的《ICOMOS-TICCIH 工业遗产地、结构物、地区与景观维护原则》及联合国教科文组织通过的《监护无形文化遗产公约》之存在与贡献，并根基于它们的基础与精神来发展宣言的内容。

第二条

体认到亚洲地区由于都市扩张、土地开发、人口快速增长、产业结构调整、技术更新及生产方式的快速改变，导致许多位于都市或市郊的工业遗产面临闲置或拆除的命运，因此采取从国际层级、国家层级到地方层级的保护策略必须立即执行。

第三条

体认到亚洲地区工业发展的历程与西方世界有所不同。自发式的生产方式与设施的发展是当地历史的一部分。工业遗产的定义在亚洲地区应该更加广阔，包含了前工业革命时期及工业革命之后的技术、机器与生产设施、人造物与人造环境。

第四条

体认到亚洲地区工业遗产见证了所在国家或地区的现代化过程，它们提供了这些国家与地区自明性的一种重要感知，是历史不可分割的一部分。另一方面，亚洲地区工业化的成果，也经常是当地百姓辛苦付出的成果。工业遗产与百姓生活史、记忆与当地人民的故事及社会变迁密不可分。

第五条

体认到亚洲地区工业遗产往往跟当地的自然资源、土地发展与风土经济有密切的关系。不管在都市或乡间，亚洲地区工业遗产经常是一种综合性的文化景观。除了人造环境外，还深刻反映人与土地互动的结果，也具备共赏地志性的特色。

第六条

体认到亚洲地区工业遗产大都由西方国家或殖民者引入，厂房建筑与设施在当时都是最前卫的先驱，具备当地建筑史、营建史或设备史的美学与科学价值，因此要尽可能保存以反映其整体性。与厂房建筑及设施密不可分的劳工住宅、原料产地及交通运输设施等也都对其整体性有所贡献，因此也应考量加以保存。

第七条

体认到亚洲地区工业遗产在当年运作时都牵涉到机械的操作及知识，经常具体化于当地居民作为技术者的事证中。在保存亚洲地区工业遗产时，也应保存操作技术与相关的档案及文献。与工业遗产及当地居民关系密切的五行文化遗产也必须视为整体保护的一部分。

第八条

体认到为确保亚洲地区工业遗产的永续发展，保存维护的策略与方法可以具有弹性。除非某些厂址及厂房具有高度的建筑艺术价值不宜大幅干预外，工业遗产可适性再利用为新用途以确保它的维护是可以被接受的。

第九条

体认到亚洲地区工业遗产的保存维护，可以具备部分再利用弹性。不过再利用新用途不能牺牲工业遗产的普世性价值与核心价值。

第十条

体认到亚洲地区工业遗产与当地人民的密切关系，每一处工业遗产的保存维护都应该鼓励当地居民的涉入及参与。

第十一条

体认到国家与跨国间的工业遗产都是同等重要的，且日后亚洲国家的合作推动工业遗产保存维护之需的重要。因此，第十五届国际工业遗产保存委员会大会同意，在该会的架构内建立一个亚洲工业遗产网路。

Taipei Declaration for Asian Industrial Heritage

Preamble

The Fifteenth TICCIH General Assembly was held in Taipei from November 5th to 8th, 2012. This is the first TICCIH General Assembly in Asia; the event signifies TICCIH' s increasing attention to the Asian industrial heritage, which are now under increasing threat. After the fourday Assembly, the participants have reached a mutual agreement that adopting a declaration based on Asian industrial heritage to promote their conservation and preservation is appropriate and necessary.

Ⅰ. The declaration acknowledges the existence and contributions of the World Heritage Convention adopted by the World Heritage Committee, the Venice Charter adopted by the Second International Congress of Architects and Specialists of Historic Buildings, various charters and declarations adopted by ICOMOS, the Nizhny Tagil Charter for the Industrial Heritage adopted by TICCIH, the Joint ICOMOS-TICCIH Principles for the Conservation of Industrial Heritage, Sites, Structures, Areas and Landscapes as well as the Convention for the Safeguarding of the Intangible Cultural Heritage adopted by UNESCO. Following their spirit and foundation, this declaration develops its contents.

Ⅱ. We recognize that rapid changes in urban expansion, land exploitation, population growth, industrial structure, technology innovation and method of production leads to the vacancy and demolition of industrial heritage in urban and suburban areas. Therefore, starting appropriate conservation strategies at international, national and local levels is a must and a high priority task.

Ⅲ. We recognize that industrial development in Asia is different from its counterparts in the West. The development of native manufacturing methods and facilities is part of the local history. The definition of industrial heritage in Asia should be broadened to include technologies, machinery and producing facilities, built structures and built environment of preindustrial revolution and postindustrial revolution periods.

Ⅳ. We recognize that industrial heritage in Asia, witnessing the process of the modernization, contributes to the identity of regions and countries, and forms an integral part of the history.

Furthermore, the achievement of industrialization in Asia is always achieved with the help of hardworking local people. Industrial heritage is closely associated with the life history, memories, and stories of local people and social changes.

Ⅴ. We recognize that industrial heritage in Asia is deeply related to the natural

resources, land development and vernacular economy. Industrial heritage in Asia is always part of a comprehensive cultural landscape, either in urban or in rural settings. In addition to the built environment, it strongly reflects the interaction of humans and the land, featuring the characteristics of hetero-topography.

Ⅵ. We recognize that many key elements of industrial heritage in Asia were imported by colonizers or countries in the Western World, that the factories and facilities are pioneering avant-garde, incorporating aesthetic and scientific values that reflect the history of architecture, construction techniques and equipment which should be preserved in ways that reflect their integrity. Workers housing, sources of materials and transportation facilities are all contributing parts of this integrity and should also be considered for preservation.

Ⅶ. We recognize that industrial heritage in Asia includes the operations of the machinery and the necessary technical know-how, often embodied in local residents as technicians. While preserving the industrial heritage, the operational technology and associated archives and documents should also be conserved. The intangible heritage associated with industrial heritage and local people should also be treated as parts of an integrated complex.

Ⅷ. We recognize that in order to ensure sustainable development of the industrial heritage in Asia, the strategies and methods for conservation must be flexible. Except for the structures and sites of exceptional architectural and artistic values for which intervention is undesirable, adaptive reuse of the industrial heritage for a new function to safeguard their conservation is accepted.

Ⅸ. We recognize that flexibility can be applied to the conservation of industrial heritage in Asia. However, the adaptive reuse for a new function should not be achieved at the sacrifice of the universal value and core value of the industrial heritage.

Ⅹ. We recognize that industrial heritage in Asia is strongly related to local people, Therefore, the participation and engagement of the local people should be encouraged in the conservation of every industrial heritage site.

Ⅺ.We recognize that both national and transnational industrial heritage are equally important and the need of the future cooperation between Asian countries to promote the conservation of them is crucial. Therefore, the participants of the 15th TICCIH Congress agree that it is necessary to establish an Asian network for industrial heritage within the framework of TICCIH.

目 录

专题一 工业遗产田野调查与价值评价

Mines, Mining and Miners on Mariscal Mountain: Landscape and people in CRM

Andrew Johnston (3)

工业遗产评价认定标准研究——以英国为例

青木信夫 徐苏斌 张 蕾 闫 觅 (18)

认知与思考：中东铁路建筑遗产考察 张路峰 (31)

中国工业遗产价值评价体系探讨——以天津碱厂为例

青木信夫 闫觅 徐苏斌 (36)

近代工业遗产的突出普遍价值研究——以福建马尾船政与北洋水师大沽船坞为例

季宏 王 琼 (46)

铁路遗产调查与价值评价试探——以吉林省中东铁路遗存为例

王新英 宋志强 田永兵 (54)

文化线路视角下的铁路遗产价值因子构建研究——以中东铁路滨洲线为例

张陆琛 (69)

基于CVM方法的工业建筑遗存的非使用价值评估 哈 静 潘 瑞 (77)

中东铁路工业文化景观资源调查认知研究 高 飞 (90)

延边林业建筑概况调查分析 林金花 (96)

专题二 历史文化名城与工业遗产

武汉近现代工业遗产存续概况与介入性设计探讨 周 卫 (109)

浦江两岸再开发过程中工业遗产的保护再生 张 松 (116)

再现中国近代工业第一城 ——历史学视野下的黄石工业遗产价值评价 刘金林 (129)

德占时期青岛工业遗产与青岛城市历史景观 钱 毅 任 璞 张子涵 (141)

基于城市特色风貌研究的株洲工业遗产活化与更新 宋 盈 柳 肃 (150)

矿业城市的厂城空间增长关系演化研究——以黄石为例

田 燕 侯亚琴 张一恒 (166)

昆明近现代产业建筑遗产调查及初步研究 张子涵 张 勃 钱 毅 (175)

基于价值认定的武汉龟北片区工业遗产再利用现状反思

陈立镜 周 卫 (187)

博山陶瓷工业遗产在城市历史文化重构中的再利用模式思考　韩　雪　宋　凤 (198)
基于开发主体分类的长沙地区工业遗产更新比较研究　黄　磊　朱逸夫　彭　义 (207)

专题三　工业遗产调查与评价案例研究

开滦煤矿工业遗产价值的认定与其遗产群的探讨
徐苏斌　郝　帅　青木信夫 (223)
从露天矿区到生态湖区：德国IBA SEE 2010区域复兴的新实践　刘伯英 (241)
基于遗产群保护理念的“一五”时期156项目工业遗产保护研究
杨晋毅　杨茹萍　钟庆伦　关振民 (252)
吉林省中东铁路支线文化遗产资源整合与保护利用　隽成军　范青山 (263)
再谈历史建筑的真实性——以济南老火车站的前世和今生为例　姜　波 (277)
中国台湾地区工业遗产概况　胡　珊 (286)
居住区规划设计中的工业遗产保护模式研究
——以西安市陕西重型机械厂改造规划设计为例　金　鑫　陈　洋　王西京 (295)
中东铁路哈尔滨段城市铁路遗产廊道构建初探　李　晨 (308)
基于田野调查的中东铁路满洲里至碾子山段城镇空间类型研究　郑志颖　高　飞 (318)
哈尔滨南岗区中东铁路工业遗产展示系统构建　申洪浩 (327)
工业建筑遗产保护及再利用——以石家庄老火车站为例　马中军　吴　浩 (335)
历史的记忆——胶济铁路站房建筑遗产现状调查与研究
贾　超　王梦寒　姜　波 (342)
济南仁丰纱厂工业建筑考察及再利用可行性初探究　赵佳怡　陈阳博 (351)
烟台宝时造钟厂近代工业遗产考察　陈阳博　赵佳怡　李　桥 (359)
再议哈尔滨江畔公园饭店——跨文化木构遗产的特征识别与保护
夏　琴　朱晓明 (369)
上海曹杨一村的原始规划特征与产业遗产可识别性　邹尼尼 (379)

专题四　基于多学科的工业遗产研究

工业遗存的“遗产化”过程思考　董一平　侯斌超 (393)
工业遗产基本概念概述与辨析　杨茹萍　杨晋毅 (401)
中国工业遗产的阶级情感与情感遗产：基于工业文艺作品的分析
李蕾蕾　王顺健 (414)
中国工业遗产研究中的社会学方法　初　妍　王润生 (425)
浅论工业遗产中的非物质文化　李　莹 (432)
铁路文化线路及其线路本体遗产构成探究——以中东铁路西线黑龙江段为例
季　宪 (438)

以洛阳为例谈滨水人居与棕地划定——城市规划棕线的提出　刘长飞　孙跃杰 (448)
“两型”社会试验区新城建设与工业建筑更新的关联策略研究——以长沙大河西先导区为例　黄　磊　魏春雨　王　蔚　黄钟书 (452)
工业遗产的宣传展示研究　胡　燕 (464)

专题五　工业遗产的适宜性再利用

舍本求末——武汉万科·润园的规划设计实践　桂学文 (473)
景德镇近现代陶瓷工业遗产保护和改造实践——以景德镇陶溪川宇宙瓷厂陶瓷博物馆改造设计　张　杰　胡建新　叶　蕾　李国发 (479)
工业遗产空间重构的规划模式探讨——宁波甬江北岸棕地开发的规划实践　何　依　孙　亮　陶茂峰 (488)
经济平衡视角下的工业遗产保护与利用——沈阳红梅味精厂“抢救式”规划实践　殷　健　范婷婷　李越轩 (495)
采石废弃地生态修复与景观重建措施初探——以晋城市玉屏山生态区为例　龙芳婷　戴　菲 (501)
世博后浦西片区工业建筑遗产的可持续再利用调查研究　彭　义　吴国欣　黄　磊 (509)
工业构筑物保护视野下的旧水塔再生策略研究　江海涛　王巧雯 (517)
工业遗产的保护与再生——坊子日本电灯公司车间大楼改造设计初探　慕启鹏　金文妍　王远方 (524)
浅谈工业资源型文化创意产业园中存在的若干问题　孟璠磊 (534)
工业遗产保护的加固技术　陈存夫 (538)
德国区域转型的地域特色与文化资源应用　林晓薇 (546)

专题一

工业遗产田野调查与价值评价

Mines, Mining, and Miners on Mariscal Mountain: Landscape and People in CRM

Andrew Johnston

In the late 1990s I worked with the Historic American Engineering Record (HAER, a division of the National Park Service) as part of a team documenting the abandoned Mariscal mercury mine and village site in Big Bend National Park in Texas(Figure 1).[1] This article details the Mariscal Mine project as a case study in cultural resource management (CRM), while including research questions and methods that were not a part of the original study but that I have used in subsequent research. The goal is to present a general framework for studying a range of similar sites that may be encountered in CRM work.[2]

Figure 1 The ruins of the Mariscal Scott furnace (foreground) are only one-third the height of the complete furnace. Behind the furnace are two of the three mercury condensers. HAER photo by Bruce Harms.

Research in CRM involves combining information that we can learn from the site itself (the physical structures and landscapes) with information from the documentary record on the site, the written materials that might include company records, government records, published material on the site, industry journals, and other sources. These two very different types of sources each inform the other, giving us a better understanding of the site under study. For the Mariscal site we used sources that included histories of the Big Bend, previous histories of the Mariscal mine (which were cursory), mining journals, and records and photos from other mines in the area. Combining these categories of sources is not unique to CRM work. Researchers from a range of disciplines, including historical archaeology, geography, and cultural landscape history, combine information gained from physical sources with information from documentary sources.

While research in CRM means combining physical sources with documenary

1 Quicksilver is another name for mercury (Hg). In the early twentieth century mercury was in demand for the production of bomb detonators and other war materials. Cinnabar (HgS), the primary ore of mercury, is often bright red and is used to make vermillion.

2 For CRM issues in mining see Bruce J. Noble, Jr. and Robert Spude, Guidelines for Identifying, Evaluating, and Registering Historic Mining Properties, National Park Service, 1992; CRM 21(7) "America' s Mining Heritage," National Park Service, 1998; and Leo R. Barker and Ann E. Huston, Death Valley to Deadwood; Kennecott to Cripple Creek. Proceedings of the Historic Mining Conference, January 23-27, 1989, Division of National Register Programs, National Park Service, San Francisco, CA.

sources, what matters most, as in any research, are the questions we ask. Questions lead us in our research, guiding us to seek out evidence we can use to answer them. The "Mines, Mining, and Miners" of the title of this article refers to three broad categories of questions that we can ask in researching CRM sites, questions concerning the physical site, what went on at the site, and the people who were involved with the site. It is useful for researchers to separate out these categories in order to manage their research, while being vigilant, however, in remembering that they are inextricably interconnected.

The questions we ask about the mines, the physical sites we study, tend to be "What is it?" , "How was it built?" , and "When was it built?" These questions drive research that results in descriptions of the resource, and these descriptions, often called documentation studies, are frequently the first step in CRM related research. Questions about "Mining" refer to the activity that occurred at the site under study. At production sites like Mariscal an industrial process was performed and the physical structures of the site can best be understood by understanding the part they played in this industrial process. Questions for this type of research include "What was the industrial process?" and "How was the process performed on the site?" Questions about "Miners" guide us to study the people who were involved with the site, both the builders or workers and other people including the workers' families. At Mariscal we were interested in the stories of the men, women, and children who built, worked at, and lived their lives in relation to the mine. To tell stories of these people we need to ask "Who were these people?" , "Why did they build the site the way that they did?" and "What were their lives like?" Ultimately the questions that we ask about "Mines, Mining, and Miners" guide our research and dictate the story that we are able to tell about a site. A large part of the art of research is to ask questions that can best tell us what we want to know about a site, being mindful that the questions we ask need to be matched to the site. We cannot ask questions of a site if the evidence we need to answer those questions is not available.

The goal of the Mariscal Mine recording project was to create HAER documentation for the Mariscal site.[1] This documentation is a nationally recognized standard in historic preservation, and is often specified as a way for Federal and State agencies to meet certain legal requirements.[2] The end result of the Mariscal HAER documentation was sixteen 24 by 30 pages of measured drawings of both existing conditions and reconstructions, field notes used for the drawings, fifty two large-format photographs, a ten-thousand-word history of the mine, and an archaeological site survey of the mine settlement and its surroundings.

The HAER team architects spent six weeks in the summer of 1997, working from sunrise until early afternoon (when temperatures soared to 115 degrees F.), taking detailed measurements and preparing field notes on each of the features at the Mariscal mine. In the process of preparing these field notes the team members became intimately familiar with the site. Back in an air-conditioned workspace the team combined the field work with information from the documentary record through a

1 The project was sponsored by the Historic American Buildings Survey/Historic American Engineering Record, Big Bend National Park, and the Intermountain Cultural Resources Center, National Park Service.

2 See the Secretary of the Interior' s Standards for the Treatment of Historic Properties at http://www2.cr.nps.gov/tps/standguide/index.htm. For more on the Historic American Engineering Record see the HABS/HAER website at http://www.cr.nps.gov/habshaer/, and a special edition of CRM, 23(4) "Historic American Engineering Record", National Park Service, 2000.

method that involved making informed guesses, checking them with the site ruins and with the documentary record, and modifying the guesses where necessary.[1]

The Mariscal Mine Recording Project is presented here in an idealized form, detailing the work that was done, adding new research, and creating a wish list of items for future research. The HAER Mariscal drawings, photographs, and history, are referenced throughout this article, and are available on the internet from the Library of Congress, HABS/HAER collection.[2]

Mines: The Mariscal Mine

Sites have a lot to say, and there is much to recommend using all your senses in site research—sight, smell, touch, hearing, and sometimes even taste. Sites are also often mute. Sometimes we can coax them to speak, other times they' ll keep their secrets forever. Becoming intimately familiar with a site is a must. Cultural landscape studies has much to offer regarding guidance for asking questions that explore the reciprocal relationship between the site and the groups who built and inhabited it (Figure 2).

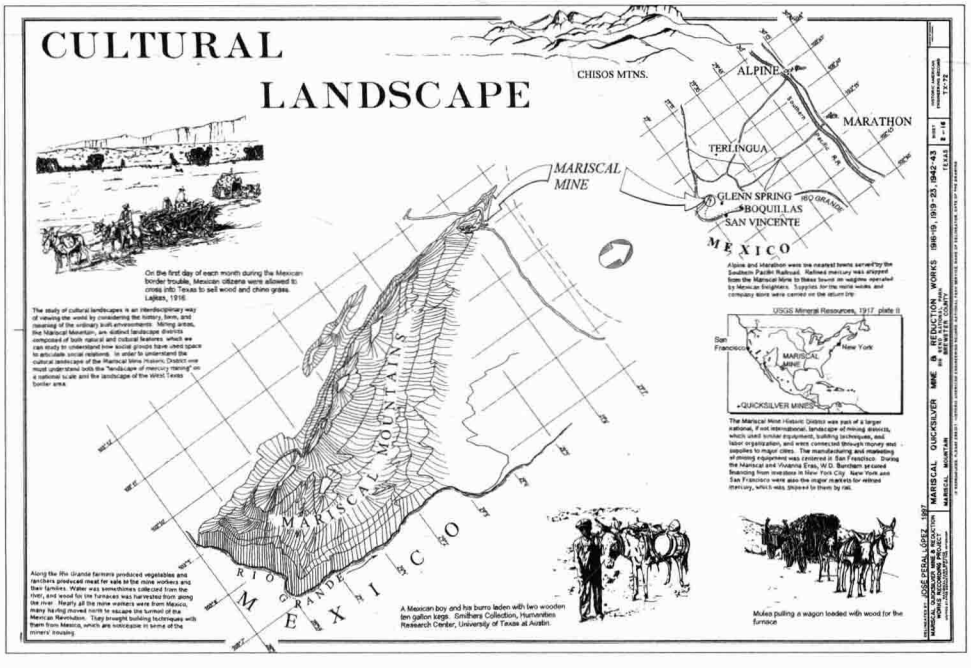

Figure 2 This drawing introduces the idea of the Mariscal Mine cultural landscape as an interrelated set of resources that is more fully understood when the physical landscape remains are "inhabited" by the researchers with information regarding the builders and original inhabitants. (Drawing is available full-size at American Memory, Library of Congress, keyword "Mariscal.")

The Mariscal Mine site is remote, deep within Big Bend National Park and accessible only by four-wheel drive. Only six miles from Mexico, the mine is on the northern tip of Mariscal Mountain, a long ridge that extends from the United States into Mexico, but that is cut through by the Rio Grande River, creating a remarkable

1 People contributing to the Mariscal project, in addition to the author, included Robert Spude, Jose Peral Lopez, Christopher Brown, Arthur Gomez, Donald Hardesty, and Thomas Alex.

2 The HABS/HAER collection is available online at the Library of Congress, Prints and Photographs Division, http://lcweb2.loc.gov/ammem/hhhtml/. Search by the keyword "Mariscal."

canyon that is the boundary between the countries. In the vast desert landscape the mine ruins and even 3900 foot Mariscal Mountain appear small, especially when you see them against the 7800 foot Chisos Mountains (Figure 3) . Mariscal village, marked by stone shelters built by miners, was built where the desert floor meets the mountain (Figure 4) .The most visible ruins are the ore-processing facilities, extending for a few hundred yards from the desert floor up and over the crest of the mountain. From the construction and condition of the ruins it is clear that the features extend not only in space but also over time, raising questions of when one structure was built relative to another.

Figure 3 Three eras of mining activity on Mariscal Mountain are visible in this view. At the lower right are the Ellis era ruins; in the middle are the Mariscal era ruins; and at the upper left are the Vivianna era ruins. The mine entrance is at the top left. The piles of tailings (waste rock from the furnace) are prominent directly below the ruins of their associated era. Photo by Bruce Harms.

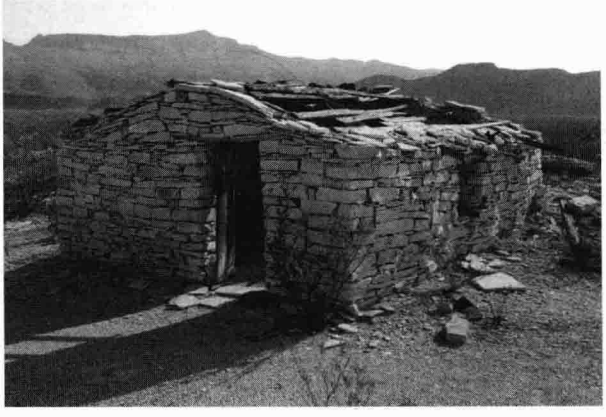

Figure 4 The stone houses at Mariscal were constructed from the local rock with wood for doors, window frames, and roofing support. While this house exhibits horizontal stone coursework, other stone houses at Mariscal were built with a variety of coursework styles. See the house in HAER photo 48 in the Mariscal collection for an interesting comparison with the house above. HAER photo by Bruce Harms.

Few of the ore-processing features are identifiable to the untrained eye. We can't identify them in the way we can identify a house, an outhouse, or a barn. Industrial sites are built by people to do unique things that are not a part of our everyday world. While the features are hard to identify, the workmanship involved in making them is evident, and provides a ready connection with the makers. A number of the Mariscal structures are made of hewn stonework, and we connect with the builders by imagining them shaping the stone, and then lifting and mortaring the stones into place.

The features at Mariscal are ruins. The valuable and the portable pieces of the site have been taken; what is left are the parts of the site that are durable and lack economic value, characteristics that allow them to survive the elements, salvage companies, and looters. One ruin that is easy to identify is a former furnace, evident from the firebrick strewn around it (figure 1) . It is easy to see, however, that there isn' t enough brick on the ground to come close to rebuilding the furnace. In instances such as this the site begs us to ask the questions "Why was the furnace torn apart?" and "Where did people take the brick and why?" A partial answer to the furnace questions comes from a building further up the hill. Maybe it was an

office or a bunkhouse. The walls are partially made with firebricks, probably from the old furnace (Figure 5) . Was the firebrick from the old furnace, or was it damaged or simply left over from furnace construction? On the initial visit the site prompts us to ask many questions, while making clear that the multiple episodes of occupation are not clean and distinct, but complicated and interwoven.

Figure 5 The top floor and the roof are missing in this interior view of the office structure. Firebricks were mixed with stone from the site to build the first floor, while firebrick alone was used to form slots for the floor joists (middle of image) and roof joists (top). Photo by Bruce Harms.

Not far from the top of the ridge the aboveground processing plant ruins give way to the underground world of the mines. In mining landscapes the focus of human endeavor—the greatest effort in reshaping the earth—occurred underground in the mines. At Mariscal the mine openings have thankfully all been closed by metal grates, although those with the stomach for it can lie on the grate over the main shaft, a forty-story hole straight into the earth, after checking first for rattlesnakes, and feel and smell the cool and musty air that has been circulating through the mines. In the hills around the main shaft are a handful of small and irregular entrances leading to a warren of tunnels and diggings.

Besides the mine and processing plant, there are the remains of a village of about forty houses, of which about half are of a relatively permanent construction. This village was the focus of an archaeogical survey of the extended area around the mine included in the HAER project.[1] Some of the associated features relatively close to the mine and houses were a cemetery, wells, and a brick kiln. Further afield but with importance for the mine were small farms along the Rio Grande where some of the food for the mine was produced and forested areas in the Chisos Mountains many miles distant that were the nearest source of timber. The nearest settlements (around 1920) were Glenn Springs, seven miles to the northeast, and small villages across the river in Mexico. All of these features figured in the lives of the people at Mariscal and have a part in the story of the Mariscal environment.

Mining: Making Mercury at Mariscal

Over the years, the Historic American Engineering Record has emphasized the recording of industrial processes, that is, detailing how a site actually operated through drawings, photography, and history.[2] Understanding the industrial process is an important step in CRM research on industrial sites. At mines such as Mariscal the industrial process included two main steps-mining the ore and processing the ore. Mining the ore took place underground, and is in most cases difficult to study because the physical remains of the activity are not accessible. Processing the ore took place aboveground, and is much easier to study. The most significant force governing both processes at Mariscal was gravity-workers moved ton after ton of

1 See HAER drawings #3 and #4 in the Mariscal collection at the Library of Congress.

2 The tradition of HAER drawings goes back to the 1930s and the Works Progress Administration (WPA). As a means of giving employment to out-of-work architects during the Great Depression, the Historic American Buildings Survey (HABS-the older sibling of HAER) was a New Deal project in which historic buildings were recorded for posterity. An example of these early drawings is the HABS drawings from the New Almaden mercury mine, the other mercury mine in the HABS/HAER collection, also available at the Library of Congress website (keyword "New Almaden"). These drawings, which are exquisitely detailed representations of the mine buildings as they existed in the 1930s, make an interesting content comparison with the industrial-process-oriented drawings from the Mariscal project.