Disproving Plaintiff's Exposure—Sequencing on Land and Sea

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I. Introduction

Life, as plaintiffs in asbestos cases would have us believe, was a lot different in the 1970s from what it is today. For instance, remodeling homes was easy and effortless. If you wanted to expand a room, add a closet or bathroom, or convert a basement to bedrooms, no worries, just pound out a wall or two and get right to sheetrocking as quickly as you can. In fact, most of the remodeling projects we learn about during plaintiffs' depositions in asbestos cases involved no planning, no permitting, and days and days of sheetrocking. In the context of subcontractor claimants, whether the work involved a commercial or residential job, all subcontractors were exposed to vast quantities of joint compound dust, including those subcontractors involved in laying foundations, installing plumbing, or wiring for electricity. While these assertions may seem foolish enough to be ignored outright, that would be a risky approach when $15 to $20 million is at stake. In these high-stakes asbestos cases, it is important to overturn each claim or assertion to gain credibility with the jury and to reduce or eliminate your client's exposure.

To adequately and completely defend claimed exposures in the context of the building industry, defense counsel should have a firm understanding of construction sequencing and management, a thorough knowledge of the documents that exist, and how to use those documents. With these tools, defense counsel will be in the best position possible to defeat assertions that the claimant was exposed to work done by other trades. These same principles and documents may also help to establish exposure among trades should that testimony benefit the circumstances of your particular case.

While it may seem logical that the sequencing arguments that apply to the construction of buildings would likely have equal application to the construction of sea vessels, there is little overlap in the construction principles employed in these distinct industries. In the construction industry there is general uniformity across the country in the sequencing of the principal steps in the construction of residences and commercial buildings. However, in the shipping industry, the basic steps of production are largely dependent on the design or layout of the specific shipyard where the ship is built. Basic variances involved in shipbuilding as compared with constructing buildings are discussed below.

II. Construction Sequencing and Management

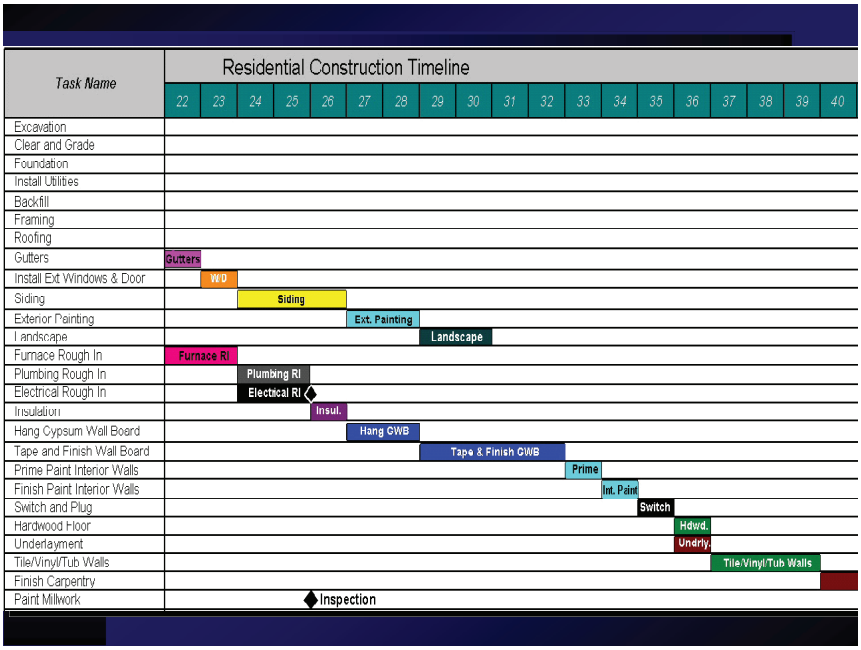
In order to manage efficiently the personnel, materials, and inspections required in constructing a building, a construction manager must design a schedule indicating which steps are expected to be performed and the duration of each step. The basic steps involved in the construction of a home include the following:

House plans
Financial
Legal
Survey
Sitework
Foundation
Framing
Plumbing
Electrical
Mechanical

Roofing
Exit Doors
Windows
Brick
Siding
Stucco
Fireplace
Insulation
Drywall
Interior Doors
Interior Trim
Stairs
Paint
Cabinets
Appliances
Flooring
Hardware
Lighting
Landscaping

A construction manager can determine how much time each step will take by consulting databases providing the specific productivity rate for each step. The specific productivity rates are determined by data provided by contractors and subcontractors. Currently, these rates are available on-line. In the 1960s, these rates were available in printed form. When the steps are transferred to a bar time chart as is used in the construction industry, it is easy to discern the sequencing of the various trades involved, the time involved, and the areas of potential overlap. While there is some overlap between certain steps in the construction process, too much overlap reduces the efficiency of the work environment. For instance, it is inefficient to schedule the plumbers and HVAC contractor to work on a house at the same time, as they will get into each other's way.

The following is a schematic illustrating a portion of a typical construction sequencing plan.



As the schematic shows, the rough-in plumbing and electrical work must be completed before an inspection takes place. Once the inspection is completed, insulation work is followed by hanging drywall, then taping (joint compound work). Therefore, if a plaintiff asserts that she was exposed by working alongside other trades, that testimony should be scrutinized with typical construction sequencing in mind.

III. Inspections

In addition to reviewing the potential overlap between various subcontractors, another way to disprove a claimant's contention that she was present during the work of another subcontractor is by an analysis of required inspections. For example, since the rough electrical must be inspected before the drywalling can be done, it is unlikely that an electrician would be present during the drywalling phase of construction. At a minimum, the typical inspections on a construction project include: foundation inspection; plumbing; mechanical, gas, and electrical system inspection; frame and masonry inspection; and final inspection. To identify the inspection requirements pertaining to a specific project, consult the building department for that municipality. The inspection requirements for most municipalities are located on the web sites for those municipalities.

IV. Permits

In order to obtain an inspection, the contractor or homeowner must have a permit. Permits are required for new construction and almost all remodel work, with the exception of minor repair work, such as painting or replacing lamps. A permit is an official document that gives the applicant permission to conduct certain activity. The building department for the governmental entity with authority over the work will issue the permit. The steps required to obtain a permit include submitting a detailed description of the proposed project. Most municipalities require that the applicant submit plans or drawings with specifications meeting architectural, mechanical, structural, and electrical requirements.

Often, when a permit is issued, the issuer will provide the applicant with a list of required inspections. If the applicant fails to obtain the required inspections, it will be denied a certificate of occupancy, which is required before selling or renting a building.

In some cases, claimants have testified that permitting was not required in the 1970s. During the early 1970s, many governmental departments adopted the Uniform Building Code, which was first developed in 1927. For example, Montana first adopted a statewide building code in 1972 based on the uniform codes. Virginia adopted a statewide building code based on the uniform building codes in 1973. In 1973, the state of Oregon introduced and passed legislation for a statewide building code program. Key concepts included in this legislation were statewide uniformity; adoption of model codes; and state building codes composed of specialty codes, that is, structural, mechanical, electrical, plumbing, boiler, and elevator.

Section 301 of the Uniform Building Code required permits for all construction and almost every aspect of remodeling work. Information regarding the requirements for permits and inspections was contained in periodicals, including *Business Week* in 1972 and in *Sunset Magazine* in 1977.

V. Types of Construction Documents

In order to perform a forensics-type analysis of the construction sequencing that would have applied to an existing building during its construction, it is important to gather as many available documents as possible.

While the ease of production and reproduction of building specifications has dramatically increased over the last 25 years with the advent of computer aided drafting ("CAD") in 1985, construction drawings and

specifications have been recorded manually since as early as the 1200s. Detailed construction drawings have been a vital communication tool that helps engineers, architects, and builders work together. The preservation of construction drawings assists facility managers maintain the buildings and assist with future expansion or renovations.

Depending on the scale of the project and how long ago it took place, available construction documents might include the following:

1) Design Documents
    a) Architectural Plans
    b) Civil Engineering Plans
    c) Geotechnical Reports
    d) Mechanical Plans
    e) Electrical Plans
    f) Structural Engineering Plans and Calculations
    g) Plumbing Plans
    h) Landscape Plans
2) Plans within Plans
    a) Details
    b) Sections
    c) Notes
3) Specifications
4) Shop Drawings
5) Submittals
6) Design-Build
7) Requests for Information (RFIs)
    a) E-mails
    b) Faxes
    c) Telephone Calls and Notes
    d) Field Notes and Drawings
    e) Meetings: Regular and Special
8) Supplemental Design Instructions (SDIs)
9) Product Data
10) Office Samples
11) Site Samples
12) Mock Ups
13) Contractor's Product List
14) Substitutions
15) Construction Drawings
16) As-Built Drawings

17) Record Drawings
18) On-Site Tests
19) Operations and Maintenance Manuals
20) Daily Reports
21) Construction Observations/Contract Administration
22) Value Engineering
23) On-Site Coordination: Designers, Subconsultants and Contractors and Subs
24) Government Inspections
25) Special Testing and Inspections
26) Project Close Out
    a) Punch Lists
    b) Certificates of Occupancy: Temporary and Permanent
    c) Substantial Completion
    d) Warranties and Operating and Maintenance Manuals
    e) Equipment Data
    f) Pay Certificates: Periodic and Final

As is expected, with the passage of time, it is increasingly difficult to locate these records from traditional sources, such as the general contractor and owners. As such, it is often necessary to go to other sources that may have available records, including maintenance or facility managers for existing buildings, governmental planning and permitting entities, mortgage and title companies, and other financial institutions.

VI. Building Codes

As with construction documents, building codes have a long history. Baltimore passed its first building code in 1859. The building codes are the set of rules that specify the minimum acceptable level of safety for constructed objects. The main purpose of building codes is to protect public health, safety, and general welfare as they relate to the construction and occupancy of buildings and structures.

Initially, in the United States, each major city had its own building code. Over time, due to discrepancy between codes and the cost and complexity of developing building codes, virtually all local governmental entities have chosen to adopt model codes. Presently, the city of Chicago is the only municipality in America that continues to use a building code it developed on its own (Municipal Code of Chicago).

VII. Relevance of Construction and Permitting Documents

Depending on the circumstances of your case, the construction documents may be useful in proving that it is unlikely one type of subcontractor would be present and working at the same time as another type of subcontractor. The construction documents may also be helpful in disproving the claimant's testimony regarding the size of the job, who was involved in the job, or when the job took place. In the case of joint compound, many of the manufacturers removed asbestos from these products in the late 1970s, so if the job at issue actually took place after this time, it would be relevant to show that it is unlikely there was any asbestos in the compound and therefore unlikely there was any exposure. The documents may also be relevant in raising questions about whether the project actually took place. For example, to the extent that the claimant claims she remod-

eled a basement, the permitting, construction, or property records may support a finding that the building did contained no basement.

VIII. Admissibility of Construction and Permitting Documents

There are several avenues to explore in reviewing the potential admissibility of construction and permitting documents. The records may be admissible under a public records exception to the hearsay rule. The records may be admissible as ancient records. Depending on your state disclosure requirements, they may be admissible through predisclosure procedure such as Washington's ER 904 rule. It may be possible to skip the foundational requirements by attaching the documents to an appropriately worded series of requests to admit. Another option may be to present the documents to the claimant during a deposition or at trial and ask if the documents pertain to the construction of the building at issue.

IX. Construction Experts

Many of the concepts related to construction sequencing are common enough that sequencing can be discussed with the jury during *voir dire* without the need to call a specific expect or witness to explain these concepts. If you intend to present construction sequencing graphics, often an expert will be needed.

Some sources for locating construction experts include builders associations, code advisory boards, and universities. Many universities offer degrees and postgraduate degrees in construction management or construction engineering. Ideally, candidates to serve as experts would have a background that included contract administration, site management, and construction safety.

X. Expected Scope of Testimony of Construction Experts

Construction sequencing experts are often called upon to discuss the basic sequencing of a job and whether the testimony provided by the claimant is consistent with normal construction operations--for instance, the issue of whether an electrician would normally be expected to be present in a building when a drywaller is sanding a joint seam. A construction expert can be expected to opine that while there may be some concurrent work by an electrician and a drywaller in a commercial setting, that is not the case in a residential setting. The construction expert can provide the basis for this opinion, including a discussion of the required inspections required after the electrician completes her work and before the drywaller may begin her work. In the residential setting, the electricians will not return to make up the boxes and conduct the switch and plug phase until after the walls have been painted, long after the drywallers have left the building. Finally, the electricians may return a third time to a residence to complete the light fixtures and finish the switching and plugging. With commercial work, a construction expert can be expected to testify that there may be some overlap between the work of an electrician and a drywaller in situations where the construction manager is sequencing the completion of work by floor or by unit. In these cases, it is possible that an electrician might be conducting work on one floor while a drywaller is conducting work on another floor.

XI. Discussion of Sea Vessel Construction

Analyzing the likelihood of overlap between specific trade workers in the shipbuilding industry is a complicated undertaking. Unlike the construction of buildings, where the basic phases involved in construction have been around since the early 1900s and each phase flows logically from the preceding phase, the approach to ship construction has evolved considerably over the years and is dependent on the characteristics of the par-

ticular shipyard at the time of construction. The evolution of shipbuilding has primarily revolved around the initial introduction of rivets and then the development of accurate and advanced technology for steel cutting and welding.

While early ship construction involved highly skilled craftsmen, as technology progressed, mass production of ship components increased. In addition, with the increase in lift capacities, the workers were able to produce larger modulars away from the shipway. The shipways became assembly areas in the 1950s and 1960s, rather than fabrication areas as they were before World War II.

The manufacture and assembly of piping systems represents one of the largest outfit tasks in shipbuilding. Pipe pieces are manufactured in pipe shops in most shipyards, and then the pipe assemblies are delivered to the assembly site. The bulk of the machinery needed on sea vessels is purchased from outside vendors and is installed using basic welding and bolting.

Unlike building construction in which laypersons (including jurors) will have enough common knowledge to understand the basic phases of construction and the need for and use of construction sequencing, in reconstructing the phases involved in the development of a particular ship or the activities at a particular shipyard during a specific time period, defense counsel will invariably require expert assistance. An expert, by reviewing thousands of archived records, may be able to re-create the likely phases involved in the building of a particular sea vessel and from this process may be in a position to opine as to the likelihood of overlap between various trades.

XII. Conclusion

Due to the nature of asbestos litigation, the majority of plaintiff's case will invariably be comprised of the hazards of asbestos, your client's purported knowledge of these hazards, and the tragic consequence of the claimant's exposure to asbestos. The defense witnesses are often focused on the science and medicine related to exposure and disease. In a case involving construction exposure, supplementing the defense with a discussion of construction sequencing, permitting requirements, and the physical facts regarding the scope of the job and date of construction is often beneficial. The jury can be expected to spend considerable time talking about this evidence because it is easy to understand and fits within their general knowledge before entering the courtroom. Defense counsel are well advised to spend time filling out the defense of their cases with a discussion of construction sequencing to illustrate the unlikelihood that the claimant was exposed to the purported offending product. Before attempting to engage these same principles in a shipbuilding context, defense counsel should consider retaining an expert to learn more about the particular shipyard in question to assess whether it is possible to recreate the likely sequencing of construction that might have taken place at the time a particular vessel was constructed.

XIII. List of References

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