



WATER-RESISTANT DESIGN_{AND} CONSTRUCTION

An Illustrated Guide to Preventing Water
Intrusion, Condensation, and Mold



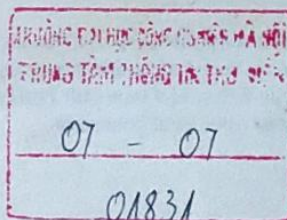
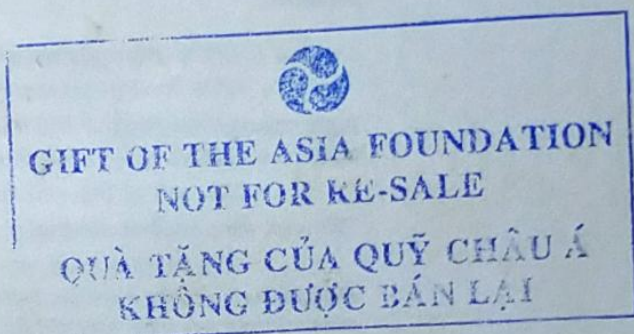
William L. Walker and Daniel J. Felice, Sr.

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and Mold

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To my family past, present, and future. To my parents whose sacrifices and love made my life rich in experiences. To my wife and children who bring me such joy with the simplest acts and whose touch fulfills me, whose look says a thousand words.

To our children's children- for whom all decisions should be considered... our actions have such long-lasting consequences.

And to the family of man
Who all need good shelters
Places to live, to worship and to work,
Spaces that are stimulating and safe
Lasting and good.

Knowledge is such a cumulative thing. I am aware of the contributions of my parents, teachers, coworkers, and even my grandfather have made toward what I know today. There are countless millions of people who have learned something before us. Many of them were involved in building practices using countless materials. There are hundreds of thousands of lessons learned in the past that have been communicated to us and are integral today in our design and construction practices. We can only hope that some of the information presented in this book will prove useful to others.

ABOUT THE AUTHORS

William L. Walker was born in Saint Louis and moved to Florida in 1959. He grew up walking through the walls of his grandfather's houses on Saturdays when he was only a few years old. His father was both an aeronautical engineer and a licensed general contractor. This taught the son an analytical approach toward problem solving that hopefully is present in this book. William is a licensed architect, with both a bachelor's degree and a master's degree in architecture. He is a member in good standing of the American Institute of Architects and works in the Orlando area as a senior project manager with CT Hsu and Associates, Architects. He is also an active member of the Construction Specifier's Institute (CSI).

William has worked in many roles in the construction industry. When he was in his twenties, he worked as a design/build general contractor in Florida's east coast. Among his many duties, he was chief designer for custom homes, small commercial buildings, and remodeling jobs. His duties included ordering materials and quality control of construction activities. Since that time, he has worked in architectural and engineering offices and was field engineer on many of central Florida's larger commercial buildings. He has worked as project manager for design and construction for hundreds of millions of dollars worth of buildings. He has had the pleasure of living in two single-family residences of his own design and was head of engineering and operations for 5 years in a 500,000-square-foot laboratory building that he helped to design and build.

William has worked in Brevard, Orange, Leon, and Osceola counties for years overseeing design and construction of government, commercial, and recreational facilities. Some of this time was spent as senior project manager of Osceola County, where his duties included design and construction of Osceola Heritage Park and solving problems in existing county buildings. Many of those problems were the result of water intrusion. Some of them were at grade, whereas others came from roofing, windows, walls, plumbing piping, roof drains, wall paper, caulking, and insulation. He has developed a reputation as an excellent problem solver. His attention to detail and basic understanding of applied physics have enabled him to find cause in some challenging situations. Coupled with his design and construction background, this allows him to develop a good fix. Continued observation after work has been performed has led to a confidence in his process and the products he recommends. He has honed these skills through participation on high-end condominium, government and commercial projects alike.

William is also a pretty good architectural illustrator. He has developed construction details for more than 35 years. He has taught design and graphics at the university level. He has done technical drawings for patents and designed the cover for and contributed a chapter to the *Handbook for Manufacturing*

Engineering. He has chosen to use computer-aided design (CAD) for most of the technical drawings contained in this book. This enables enlarged details to be presented that illustrate some of the subtle but important differences between good and bad detailing. William has been invited to present seminars to both AIA and CSI audiences which teach building envelope principles contained within these pages.

Dan Felice, contributing author, is vice president of Felice and Associates, a specialty waterproofing and roofing consulting firm. Dan has worked for more than 15 years on some of Florida's most challenging projects. His firm focuses on waterproofing and performing preconstruction design review and inspections during the construction process. His clients include some of the largest developers in the industry in Florida and as far away as China. Dan began as a roofing specialist and years ago branched out to include the entire building envelope. Dan and William developed a great working relationship while teaming together as construction administrators for the World's largest entertainment company on commercial projects in the Orlando area.

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