Our built environment is currently undergoing a transformation in terms of digitalization. Today, computers are attached, or embedded in our physical environment and accessed through e.g. RFID, 3G, WiFi and Bluetooth, manipulated via e.g. embedded public interactive displays and tangible user interfaces (TUIs), through interaction modalities including e.g. gestures, movements, positioning techniques, voice commands, etc. In these modern environments we also carry with us small mobile computational devices capable of communicating with the infrastructure, or the digital elements of the built environment, to e.g. make phone calls, unlock doors, schedule meetings, or access the Internet.

Embedded computers in our built environment have so forth mainly been installed for functional purposes, e.g. to support us in automatically open up doors for us at shopping malls, control the heating in our houses, and so on. More recently however researchers, designers, and artists have started to explore how digital technology could be used as a design material to reshape our build environment into interactive environments or “interaction environments” in support of social interaction, play and experiences. Through the blend of digital technology, sensors and media with public places new forms of digitally enhanced environments are brought into our reality. Today, researchers, designers, artists and architects have started to address, and approach this development through the development of concepts including e.g. ubiquitous computing, embodied interaction, interactive architecture, responsive environments, media places, hybrid spaces, ambient intelligence, and digital art installations.

These new interactive environments are often portrayed as being responsive, active, sensitive, and in a constant dialogue with us as users or inhabitants. While this trend started out with quite simple and small-scale examples of so called TUIs (tangible user interfaces) in which a user can interact with, and manipulate, digital material though the interaction with physical objects, this trend is now developing on a large scale basis due to the development of new innovative materials (Materio, 2007) or transmaterials (Brownell, 2005; 2008), i.e., physical material with interactive characteristics, and with current movements towards the creation of ubiquitous
computing landscapes realized through e.g. interactive wall installations, mobile devices and small size computers. This trend is captured in terms like ambient intelligence (e.g. Lindwer, et al., 2003; Aarts, 2005; Gárate, et al, 2005), smart environments (e.g. Siegemund, 2005; Das & Cook, 2006), interactive environments (Pinhanez & Bobick, 2003) and interactive architecture (e.g. Zellner, 1999; Kolarevic, 2003). Malcolm McCullough (2004) has argued in the book “Digital ground” that this change towards fully interactive environments has fundamental implications for both the area of architecture as well as computing as we used to know it.

This book addresses this relatively new phenomenon called “interactive architecture”, i.e. the current blending of building materials with interactive components which challenges us as artists, architects, designers, IT theorists, and geographers, to develop our language and designs towards the “use” of these environments, articulating both what it means to interact in these new modes of place, and framing interaction with and through so called “interactive architecture” (e.g. Oosterhuist & Xia, 2007; Bullivant, 2005; Bullivant, 2007).

Interactive architecture can be described as an emerging field of research in the borderland of architecture, art installations, public performance, and novel use of digital technologies. Some researchers have used alternative terms such as ”responsive environments”, “responsive architecture”, or “performatif architecture” (e.g. Bullivant, 2006; Kolarevic & Malkawi (2005)), while other have labeled the integration of digital technologies in built environments as ”hybrid spaces” (e.g. Zellner, 1999) to address a development towards a complete blend of our physical and digital world, and to address a development in which the traditional physical and social public domain is being supplemented by zones, places and subcultures that transcend the local to interlink with the translocal and the global (Rheingold, et.al., 2007). In this current development, I will take as an important point of departure current literature which describes, analyses and theorize the ongoing integration of digital technologies in our built environment (e.g. Cai & Abascal (2006); Margolis & Robinson (2007) and Greenfield, 2006).

Further on, this book builds upon a conceptualized understanding of the integration of architecture and digital technologies as ”Media spaces” to address how digital technologies enable us to spatially stretch places, connect places, and connect to other human beings across geographical distances (e.g. Morley, 1995), integration of architecture and digital technologies as new media and the digital transformation of public places (Drucker & Gumpert, 1996), and the creation of so called “Media districts” (Indergaard, 2004). In this book this is further explored through the concepts of temporal rooms and spatial communication.

In this book “interactive architecture” is approached from a multifaceted viewpoint, with its two focal roots in the specific fields of interaction design and architectural literature. In this undertaking the introduced notion of “Interaction through
textures” will serve as a unifying analytical concept capable of putting an emphasis on our built environment from an architectural standpoint, while keeping the nature of interaction at the center of our attention. Further on, the notion of “textures”, as referring to “the feel, appearance, or consistency of a surface” is a concept borrowed from the field of architecture and material science with similarities with the concept of “interfaces” in interaction design. These important similarities that can help to create a conceptual link between these two fields and that is the main objective with this book. Further on, the “through” dimension of “Interaction Through Textures” addresses the interactive dimension of the new materials and textures that modern interactive architecture rely upon, thus adding an interaction design perspective to architectural thinking, while at the same time working as a concept well established in the area of interaction design (see e.g. the book “Through the Interface” by Susanne Bødker, 1990).

As this book sets out to illustrate, textures are ubiquitous, and the “skins” of our everyday world, and they serve a number of different purposes as reference points, filters, surfaces, enablers, and extensions of human actions. As we attempt to seamlessly blend digital technology into our physical world the issue of texture, and how to work with texture from a standpoint that integrate an interaction design perspective with an architecturally rooted perspective will be one of the core challenges for the years to come.

Interactive textures will enable architects, and interaction designers to rethink the fundamentals of our surrounding with these new dimensions in mind. Welcome to a new world!

REFERENCES


