## Author Index

<table>
<thead>
<tr>
<th>Author</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abowd, G.D.</td>
<td>191</td>
</tr>
<tr>
<td>Atkeson, C.G.</td>
<td>191</td>
</tr>
<tr>
<td>Aziz, A.</td>
<td>12, 29</td>
</tr>
<tr>
<td>Beigl, M.</td>
<td>127</td>
</tr>
<tr>
<td>Brügge, B.</td>
<td>114</td>
</tr>
<tr>
<td>Bruns, W.F.</td>
<td>55</td>
</tr>
<tr>
<td>Chiu, P.</td>
<td>79</td>
</tr>
<tr>
<td>Cohen, M.</td>
<td>208</td>
</tr>
<tr>
<td>Essa, I.A.</td>
<td>191</td>
</tr>
<tr>
<td>Geisler, C.</td>
<td>89</td>
</tr>
<tr>
<td>Gellersen, H.-W.</td>
<td>127</td>
</tr>
<tr>
<td>Halkia, M.</td>
<td>210</td>
</tr>
<tr>
<td>Hartkopf, V.</td>
<td>12, 29</td>
</tr>
<tr>
<td>Hindus, D.</td>
<td>199</td>
</tr>
<tr>
<td>Hopper, A.</td>
<td>137</td>
</tr>
<tr>
<td>Huang, J.</td>
<td>215</td>
</tr>
<tr>
<td>Hunt, R.</td>
<td>2</td>
</tr>
<tr>
<td>Ikeda, F.</td>
<td>164</td>
</tr>
<tr>
<td>Junestrand, S.</td>
<td>177</td>
</tr>
<tr>
<td>Kapuskar, A.</td>
<td>79</td>
</tr>
<tr>
<td>Kidd, C.D.</td>
<td>191</td>
</tr>
<tr>
<td>Konomi, S.</td>
<td>45</td>
</tr>
<tr>
<td>Lahlou, S.</td>
<td>150</td>
</tr>
<tr>
<td>Lee, S.R.</td>
<td>12, 29</td>
</tr>
<tr>
<td>Lertsithichai, S.</td>
<td>215</td>
</tr>
<tr>
<td>Loftness, V.</td>
<td>12, 29</td>
</tr>
<tr>
<td>MacIntyre, B.</td>
<td>191</td>
</tr>
<tr>
<td>Mahdavi, A.</td>
<td>29</td>
</tr>
<tr>
<td>Mathew, P.</td>
<td>29</td>
</tr>
<tr>
<td>Müller-Tomfelde, C.</td>
<td>45</td>
</tr>
<tr>
<td>Mynatt, E.</td>
<td>191</td>
</tr>
<tr>
<td>Nakakoji, K.</td>
<td>164</td>
</tr>
<tr>
<td>Newstetter, W.</td>
<td>191</td>
</tr>
<tr>
<td>Orr, R.</td>
<td>191</td>
</tr>
<tr>
<td>Pekkola, S.</td>
<td>101</td>
</tr>
<tr>
<td>Pfleghar, R.</td>
<td>114</td>
</tr>
<tr>
<td>Polttrock, S.E.</td>
<td>2</td>
</tr>
<tr>
<td>Reicher, T.</td>
<td>114</td>
</tr>
<tr>
<td>Reitmeier, S.</td>
<td>79</td>
</tr>
<tr>
<td>Robinson, M.</td>
<td>101</td>
</tr>
<tr>
<td>Rogers, E.H.</td>
<td>89</td>
</tr>
<tr>
<td>Sakamaki, M.</td>
<td>164</td>
</tr>
<tr>
<td>Saund, E.</td>
<td>69</td>
</tr>
<tr>
<td>Schmidt, A.</td>
<td>127</td>
</tr>
<tr>
<td>Shankavaram, J.</td>
<td>12, 29</td>
</tr>
<tr>
<td>Simon, H.A.</td>
<td>1</td>
</tr>
<tr>
<td>Solari, J.</td>
<td>210</td>
</tr>
<tr>
<td>Starner, T.E.</td>
<td>191</td>
</tr>
<tr>
<td>Streitz, N.A.</td>
<td>45</td>
</tr>
<tr>
<td>Takada, S.</td>
<td>164</td>
</tr>
<tr>
<td>Tobin, J.</td>
<td>89</td>
</tr>
<tr>
<td>Tollmar, K.</td>
<td>177</td>
</tr>
<tr>
<td>Waldvogel, M.</td>
<td>215</td>
</tr>
<tr>
<td>Weatherall, J.N.</td>
<td>137</td>
</tr>
<tr>
<td>Wilcox, L.</td>
<td>79</td>
</tr>
</tbody>
</table>
Keyword Index

2D  118
3D  58, 108, 118, 211

a machine for living in  179
access to the natural environment  25
acoustics  15, 111, 178
active badge  137, 211
Active Home  203
active information wall  217
activity tracking  213
activity-based planning  3
actors  56, 151, 189
actuators  118
adaptable framework  115
Adaptive Home  203
Adaptive House  124
AdaptiveControl of Home Environments (ACHE)  124
aerospace systems  4
aesthetics of the space  16
affordances  104, 152
agent  119, 128, 140
air diffusers  40
air quality  16, 38
air to the desk  17
air conditioning  12
aircraft cockpits  150
alternative visions for augmented environments  77
ambient counterparts  140
ambient email notification  147
ambient lighting  22, 41
ambient links  140
ambient media  140, 185
ambientROOM  140, 161
AMX room  87
API  124
appliances  70, 124, 142, 205
architectural design  9, 179, 220
architecture unplugged  42
artifacts  55, 90, 151, 169, 197
ATM  101
Audio Notebook  83
audio windows  208

augmented reality  45, 55, 124, 192, 211
authentication  120
avatars  208
Aware Home  191, 202
AWL  12

balancing privacy & interaction  17
BBT  104
BEACH  52
behavioral research  205
bi-directional double links  55
big brother  159
bilateral lighting  37
BlueTooth  136
Boeing Operations Fleet Support  2
brick world  64
bridge  48, 121, 193, 216
building control  12, 117
business processes  3
calm technology  140
captured meeting  79
Casablanca project  199
case studies  164
ceiling microphones  79
CEMA  200
chair tracker  208
chalkboard  69
Classroom 2000  80, 193
ClearBoard  219
client-server application  83
clim ate  30, 114
co-construction  90, 95
CoBuild99  199
cognitive overflow  150
cognitive work  150
collaborative building  124
collaborative building applications  124
Collaborative Classroom™  89
collaborative contexts  90
collaborative protocols  89
collaborative work  25, 52, 90, 158
Keyword Index

comHOME 177, 204
commercial buildings 29, 201
common ground 90
comparative web site awareness 140
complex objects 55
component-based software engineering 114
computational perception 192
computer based guidance system 210
computer-human interaction 199
computer-supported cooperative work 52
comZONE 177
conference room 9, 22, 69, 79, 116
connectivity 15, 82, 97, 128
construction kit 55
consumer electronics show 206
consumers 122, 199
contact-free identification 45
context awareness 210
context relevant assistance 210
context sensitive information 211
context-aware development infrastructure 194
context-awareness 191, 211
contextual information 210
control and view 55
control system 42, 87, 114, 148
conversation 46, 89, 104, 180
cooperative building 2, 29, 45, 79, 101, 114, 127, 161, 200, 215
coopeative system design 55
coordinated work 90
CORBA 123, 127
COSIMIR 60
coupling reality and virtuality 55
cross-functional coordination 5
CSCW 101, 152, 179, 199, 209, 214
databases 44
day-night load balancing 30
daylighting 20, 31, 114
DDX 59
decision making 10, 13
decision processes 151
delegate object 122
delegates 209
Design Conference Room™ 89
design methodology 2
design patterns 114
design philosophy 205
device managers 50
diagnostics 124
Diagrammatic User Interface (DUI) 69
digital ink 75, 80
digital morning paper 185
digital office 69
digital video 85
dinner situation 186
directed attention 208
directed microphones 184
direction-dependent projection 208
displacement ventilation 21, 39
distance learning 215
distributed facility management 124
distributed location service 127
distributed middleware architectures 127
distributed objects 129
distributed systems 138, 192
distributed work 175
distributed work 56, 101
DNS 127
domestic environments 178, 205
domestic technologies 199
Domisilica project 193
DSS rooms 104
DV 152
DVD 82
dwelling 177, 203
dynamic data exchange 59
dynamic graphic sign 210
dynamic organizations 14
dynamic workplaces 15
DynaWall 45
Dynomite 83
ecosystems 30
EIB 115
electromagnetic tracker 209
electronic life 69
electronic scales 45
electronic world 193
embedded information devices 215
embodiments 89
emotional state 211
energy effectiveness 27, 29
energy efficiency 21, 40
energy ineffectiveness 30
energy regions 30
environment reconfigurations 14
environmental conditions 210
environmental monitoring 210
environmental sensing hardware 210
environmental sensors 114, 212
environmental sustainability 15, 29
equipment densities 40
ergonomic chairs 17, 24
ergonomics 15, 171
ergonomics furniture 171
ethical awareness 160
ethical protocol 160
ethics 153
ethnography 192
evaluation 30, 67, 150, 173, 191
event-driven 213
everyday cognition 196
everyday interactions 210
everyday technology 180
everyday work 79
exocentric paradigm 209
eye contact 105

face-to-face interaction 5, 216
facial expressions 105
facility management 114
facility simulation 124
feature-vector averaging 195
feminist studies 205
fixture 20
flex-time 15
flexibility 4, 14, 41, 80
FLO 195
floor sensors 192
floor-plan layout 178
focus of attention 211
framework 54, 114, 164, 177, 214
fully collaborative conversations 89
furniture 150, 217
furniture 3, 12, 41, 45, 80

Future@Work 2
garage ethnography 201
gaze awareness 94, 178
geographically dispersed community 216
gesture 48, 57, 73, 105, 185
gesture-patterns 59
global organization 155
global village 216
going public 89
GPS 211
grasp-pattern method 64
graspable user interface 55
GRF profiles 195
grids & nodes 12
group resources 7
group spaces 7, 15
GSA 12
GUI 184

handwritten notes 79
HAVi 124
hazard regions 30
heaters and thermostats 117
heating 12, 33, 119
heterogeneous control system 115
Hidden Markov Models 195
high-performance flexible infrastructures 19
HMM 195
Holowall 219
home 114, 128, 143, 177, 191, 199
home automation 192, 204
home computing 199
home-automation technology 181
home-related research 199
HomeNet 202
HomeRF 136
horizontal and vertical worksurface 15
household infrastructure 200
HTML 84, 142
HTTP 51, 142
human behavior 210
human communication 179
human position tracking 192
micro-zoning 15
MIME 52
Mimeo 70, 78
mixed reality 208
mobile object 129
mobile systems 127
mobile user interface 211
motion sensor 119
MPEG 137
MS-GI model 167
MUD 193
multi-disciplinary teams 3
multi-family units 204
multi-tasking 16
 multicasting conference 209
multidisciplinary 56, 89
multimedia 52, 66, 79
MUSE 210
natural conditioning 15, 32
natural ventilation 27, 30
navigation aid 211
note taking 79
NoteLook 83
object-oriented workplace 114
office applications 115
office design 15, 164
office interior 114
office of the future 34
Office Satellite 155
office space 3, 36, 165, 210, 218
Open Service Gateway Initiative 124
openness 7, 124
optimum workspace standards 16
organizational flexibility 14
organizational know-how 12
organizational performance 2
organizational re-engineering 13, 34
orientation 31, 61, 208, 210
outdoor work 17
OWL 114
passage 51
passage agents 51
passenger 48, 112
passive solar heating 33
pattern recognizer 213
PDA 80
PEM 40
perception 148, 152, 180, 217
peripheral awareness 140
personal computing 199
Personal Information Architecture Group 126
personal orientation guide 210
physical building 215
physical cooperative loft space 215
physical objects 45, 57, 143, 185
physical transportation 54
physical/virtual cooperative workspace 215
physiographic regions 30
PicoNet 127
PictureTel 102
pinup board 171
PLC 61
plenum floor system 40
plug & play 12
pneumatic circuits 56
PowerPoint 86
Predator 127
private zone 182
problematic uses 102
productive work environments 16
productivity 4, 13, 29, 114, 164, 197, 201
progress management policy 172
propriocentric sensation 208
Proxemics 155
public collaborative system 89
public space 178
public space 89
public zone 177
PZM microphones 184
quality of service 105
quality principle 104
RCN 94
real object manager 62
Reconfigurable Collaboration Network™ 89
relaxation space 17
<table>
<thead>
<tr>
<th>Keyword</th>
<th>Page Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>relocatability</td>
<td>20</td>
</tr>
<tr>
<td>relocatable infrastructures</td>
<td>27</td>
</tr>
<tr>
<td>residential technologies</td>
<td>199</td>
</tr>
<tr>
<td>RF technology</td>
<td>192</td>
</tr>
<tr>
<td>RMI</td>
<td>123, 128</td>
</tr>
<tr>
<td>robot simulator</td>
<td>60</td>
</tr>
<tr>
<td>robotics</td>
<td>56</td>
</tr>
<tr>
<td>ROMAN</td>
<td>58</td>
</tr>
<tr>
<td>room camera</td>
<td>80</td>
</tr>
<tr>
<td>roomware</td>
<td>45, 79, 161, 215, 219</td>
</tr>
<tr>
<td>schedule and meeting management</td>
<td>172</td>
</tr>
<tr>
<td>security</td>
<td>20, 54, 107, 117, 135, 192</td>
</tr>
<tr>
<td>security model</td>
<td>54</td>
</tr>
<tr>
<td>self-consciousness</td>
<td>105</td>
</tr>
<tr>
<td>semi-public zone</td>
<td>182</td>
</tr>
<tr>
<td>sensing devices</td>
<td>45</td>
</tr>
<tr>
<td>sensor technology</td>
<td>192</td>
</tr>
<tr>
<td>sensors</td>
<td>22, 41, 56, 117, 137, 191, 209, 210</td>
</tr>
<tr>
<td>shared material</td>
<td>104</td>
</tr>
<tr>
<td>shared resources</td>
<td>8</td>
</tr>
<tr>
<td>shared workspaces</td>
<td>3</td>
</tr>
<tr>
<td>shared workspaces</td>
<td>215</td>
</tr>
<tr>
<td>sharing of information</td>
<td>90</td>
</tr>
<tr>
<td>simple++</td>
<td>60</td>
</tr>
<tr>
<td>simulation</td>
<td>55, 101, 114</td>
</tr>
<tr>
<td>smart environment</td>
<td>189</td>
</tr>
<tr>
<td>smart floor</td>
<td>194</td>
</tr>
<tr>
<td>smart home</td>
<td>177</td>
</tr>
<tr>
<td>smartcards</td>
<td>121</td>
</tr>
<tr>
<td>smell</td>
<td>178, 217</td>
</tr>
<tr>
<td>SML</td>
<td>59</td>
</tr>
<tr>
<td>social awareness</td>
<td>141</td>
</tr>
<tr>
<td>social context</td>
<td>179, 205</td>
</tr>
<tr>
<td>social situation awareness</td>
<td>208</td>
</tr>
<tr>
<td>Softboard</td>
<td>70</td>
</tr>
<tr>
<td>software engineering</td>
<td>192</td>
</tr>
<tr>
<td>software infrastructure</td>
<td>52, 194, 210</td>
</tr>
<tr>
<td>SOU model</td>
<td>167</td>
</tr>
<tr>
<td>sound directionalization</td>
<td>209</td>
</tr>
<tr>
<td>soundscape</td>
<td>208</td>
</tr>
<tr>
<td>soundscape stabilization</td>
<td>208</td>
</tr>
<tr>
<td>space planning</td>
<td>13</td>
</tr>
<tr>
<td>space-defining elements</td>
<td>217</td>
</tr>
<tr>
<td>spatial arrangements</td>
<td>89</td>
</tr>
<tr>
<td>spatial design</td>
<td>178</td>
</tr>
<tr>
<td>spatial dynamics</td>
<td>22</td>
</tr>
<tr>
<td>spatial recognition system</td>
<td>184</td>
</tr>
<tr>
<td>spatial sonic cues</td>
<td>211</td>
</tr>
<tr>
<td>specification</td>
<td>150</td>
</tr>
<tr>
<td>specification</td>
<td>56</td>
</tr>
<tr>
<td>stackable panel systems</td>
<td>24</td>
</tr>
<tr>
<td>stackable partitions</td>
<td>17</td>
</tr>
<tr>
<td>stackable videoconferencing chairs</td>
<td>215</td>
</tr>
<tr>
<td>strategic coordination</td>
<td>10</td>
</tr>
<tr>
<td>STREAMS</td>
<td>80</td>
</tr>
<tr>
<td>Subcam</td>
<td>150</td>
</tr>
<tr>
<td>subjective view</td>
<td>153</td>
</tr>
<tr>
<td>super-public</td>
<td>98</td>
</tr>
<tr>
<td>sustainability</td>
<td>12</td>
</tr>
<tr>
<td>swisshouse</td>
<td>219</td>
</tr>
<tr>
<td>swivel chair</td>
<td>209</td>
</tr>
<tr>
<td>system sharing</td>
<td>89</td>
</tr>
<tr>
<td>systematic analysis</td>
<td>162</td>
</tr>
<tr>
<td>systems integration</td>
<td>12</td>
</tr>
<tr>
<td>table fountain</td>
<td>145</td>
</tr>
<tr>
<td>tangible bits</td>
<td>53, 141</td>
</tr>
<tr>
<td>tangible objects</td>
<td>55, 118</td>
</tr>
<tr>
<td>task lighting</td>
<td>17, 41</td>
</tr>
<tr>
<td>TCP/IP</td>
<td>51, 213</td>
</tr>
<tr>
<td>TEA boards</td>
<td>213</td>
</tr>
<tr>
<td>team decisions</td>
<td>213</td>
</tr>
<tr>
<td>teamwork</td>
<td>2, 89</td>
</tr>
<tr>
<td>technical installations</td>
<td>178</td>
</tr>
<tr>
<td>technological change</td>
<td>19, 30</td>
</tr>
<tr>
<td>technological histories</td>
<td>205</td>
</tr>
<tr>
<td>technology for entertainment</td>
<td>200</td>
</tr>
<tr>
<td>Tegrity</td>
<td>70</td>
</tr>
<tr>
<td>tele-conferencing system</td>
<td>168</td>
</tr>
<tr>
<td>telematic studio</td>
<td>101</td>
</tr>
<tr>
<td>telework</td>
<td>183</td>
</tr>
<tr>
<td>test-bed</td>
<td>25</td>
</tr>
<tr>
<td>The Coral system</td>
<td>80</td>
</tr>
<tr>
<td>the sciences of the artificial</td>
<td>179</td>
</tr>
<tr>
<td>theatre</td>
<td>101</td>
</tr>
<tr>
<td>thermal conditioning</td>
<td>15, 31</td>
</tr>
<tr>
<td>thermal control</td>
<td>39</td>
</tr>
<tr>
<td>Things That Think</td>
<td>124</td>
</tr>
<tr>
<td>Tivoli</td>
<td>75</td>
</tr>
<tr>
<td>town square</td>
<td>7</td>
</tr>
</tbody>
</table>
transfer of knowledge 4
tribal knowledge 5

ubiquitous computing 45, 87, 127, 140, 191, 219
ubiquitous sensing 194
ultrasonic sensors 192
Umwelt 153
Unified Modeling Language 115
universal graspable user interface 55
unobtrusive 73, 79
user controls 15
user experience 80
user profile 111, 116, 212, 219

vactors 209
valued lost time 154
variable workspace closure 17
VCR 82, 152
ventilating 12, 38
video 46, 62, 72, 79, 102, 117, 150, 177, 192, 217
video and audio space 184
video applications 79
video conference cameras 79
video mediated communication 177
VideoCafe 188
videoconferencing 101, 215
videoTORSO 177
virtual community 193, 215
virtual processes 59
virtual worlds 66, 140
virtuality 62
vision techniques 192
vision-based sensors 194
visual interest 20

visual partitioning system 218
visual stress 41
visualization tools 210
VMC 177
VR 105
VRML 66, 121

We-Met 83
wearable computing 192
web camera 155
white collar 150
whiteboard 47, 69, 80, 95, 101
whiteboard scanning 69
WIMP 60
wireless networking 192
wireless routing 127
work cells 5
work environments 2, 13, 147, 164, 178
work processes 2, 16, 89, 112
work styles 164
workgroups 12
workplace 2, 12, 118, 140, 185, 200, 210
workplace design 2, 16
workplaces of the future 25
workspaces 16, 90, 111, 117, 210, 218
workstation layouts 40
workstations 6, 12, 101
worksurface 8, 17
world-wide web 140

YCAGWYS 84
ZombieBoard 69