



Our Strengths:

- *Inventive*
- *Able to provide unique and challenging designs*
- *Detail-oriented*
- *Organized and strategic*
- *Quickly identifies core problems and appropriate solutions*
- *Proactive in project administration and coordination*
- *Articulate in communicating technical issues*
- *Effective at dispute mediation*

Innovative Building Envelope Consultants, Inc. (IBEC) was established in 1985 to meet the complex needs of the roofing, waterproofing, and deck traffic surfacing industries. IBEC has expanded its services to include exterior building finishes and other building envelope related conditions.

IBEC provides building envelope consulting services on new and existing structures for residential, commercial, industrial, institutional and historical buildings and facilities. IBEC has successfully completed several thousand projects, many that were unique, complex and detail-oriented.

IBEC specializes in building moisture control that includes prevention and remediation of exterior moisture infiltration into buildings through roofs, walls, decks and foundations, and prevention and remediation of interior water vapor condensation in ceilings, walls and floors.

IBEC is experienced with infrared thermography and has a Certified Building Science Thermographer on staff.

IBEC is proficient in building energy and sustainability practices and principles. IBEC promotes the ENERGY STAR energy performance rating system and the Leadership in Energy and Environmental Design (LEED®) Green Building Rating System™.

IBEC provides services primarily in the western states but has provided services for clients throughout North America and in other areas of the world.

IBEC is an independent company not affiliated with contractors, suppliers or manufacturers. IBEC may serve as the owner's agent in administering and coordinating construction work, but we do not manage or perform any construction work or sell any products.

IBEC offers competent, detailed services to complete even the most unique, challenging and unusual roofing, waterproofing, exterior building finishes, traffic coating and historical restoration projects.

Areas of Specialization:

- *Roofing*
- *Exterior building finishes*
- *Waterproofing & dampproofing*
- *Deck traffic surfacing*
- *Building moisture control problems*
- *Leaking and condensation problems*
- *Failure investigation related to application and materials*
- *Historical restoration*
- *Snow-climate design*
- *Ventilation of attics, rafter spaces and crawl spaces*
- *Expert Witness Service*

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Services Offered

IBEC's professional staff collaborates with qualified architectural, engineering and consulting firms to offer the experience and knowledge necessary for durable and cost-effective solutions.

Budgeting: Assist building owners in preparing budgets and provide comparative cost analysis for replacement, repair and maintenance work.

Condensation: Determine if condensation is occurring due to improper design or application, material failure, lack of proper ventilation or other causes. Determine if leaking is caused by condensation.

Consulting: Analyze and evaluate all replacement, repair and maintenance needs. Answer questions and provide information concerning design, construction and related issues. Provide comparative analysis of materials and systems including pertinent product data, their advantages, disadvantages and comparative estimated costs.

Contract Development: Assist building owners in preparing contracts for replacement, repair and maintenance work. Contracts may include qualification requirements, such as insurance, licensing, experience, workforce and equipment. Contracts typically define work schedules, payment schedules, guarantee periods and other factors designed to protect the owner, eliminate confusion and avoid problems during construction.

Design and Specification: Prepare or review specifications, plans and detail drawings for replacement, repair and maintenance work.

Dispute Resolution: Provide informal mediation of disputes involving problems related to contracts, change orders, warranties, guarantees, material failure, improper application, systems failure, improper design and other related issues.

Educational Materials: Provide books, periodicals, manuals, CD's, DVD's, manufacturer product information and other pertinent information pertaining to application, performance and problems. Provide current and historical information on manufacturers, suppliers, contractors, standards and criteria, material and application costs and other related topics.

Expert Witness Service: Provide consultation; answer interrogatories; give testimony and provide evidence at depositions, arbitration and mediation in court and in other legal proceedings.

Failure Investigation: Investigate failures of building envelope systems and components due to improper design, improper application, material failure or other causes. Make core cuts and test cuts to obtain material samples. Send material samples to certified laboratories for testing, including ASTM testing where applicable.

Historical Restoration: Provide specifications, plans and detail drawings for replacement, repair and maintenance work on historical restoration projects. IBEC has specialized roofing experience from projects involving slate, tile, wood shingle, American Thatch wood shingle, reed thatch and metal roofing.

Ice Melt Systems: Design roofing ice melt systems including self-regulating and non-self-regulating heat cable and mats, hot air or hot water/glycol tubing.

Infrared Thermography (Certified Building Science Thermographer on staff): Take infrared thermal images/photographs of pertinent roofs, ceilings and walls to help identify water leaks, air leakage, missing insulation and other temperature sensitive building conditions.

Interior Environment: Take readings inside the building to determine relative humidity, dew point temperature and other interior environmental conditions.

Leak Investigation: Investigate leaking and moisture problems related to the building envelope including condensation and mold problems. Determine if the cause of the moisture problems is related to improper design, improper application, material failure, condensation or other causes and if building damage is related to leaking.

Non-Destructive Surveys: Provide non-destructive surveys of structures using infrared thermography, electrical capacitance, nuclear hydrogen detection and other available technologies to help identify the presence of moisture in roofs, ceilings, walls and a variety of building materials.

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Services Offered

Project Administration and Coordination: Prepare specifications, drawings and contracts for replacement, repair and maintenance work. Secure bids and qualify contractors. Coordinate the work of design professionals and contractors. Perform quality assurance observations of the work in progress. Compile final project reports, including pertinent product data, contracts, specifications, plans and drawings, as-built drawings, observation reports and photographs, change orders, correspondence, final observations, checklists and guarantees and warranties.

Quality Assurance Observations: Provide one-time, part-time or full-time daily observations during construction to help assure proper installation. Written reports with photographs are submitted as needed for each observation.

Roof Management: Provide ongoing roof management or assist building owners/managers in developing and implementing roof management programs tailored to their needs and resources. Management programs can include computer software programs, reference manuals, personnel training, establishing periodic inspection, maintenance, repair and reroofing schedules, budgeting procedures, etc.

Self Help: Provide “do-it-yourself” CD’s, DVD’s, books, pamphlets, guidelines and drawings outlining proper application, repair and maintenance.

Seminars and Workshops: Provide non-accredited seminars and workshops including the latest information on building envelope products, systems and related topics. Provide training in the use of tools and the application of building envelope materials for replacement, repair and maintenance projects. Programs are designed for management and maintenance personnel and others involved with the building envelope. Information and training can be provided using text, audio/visual aids, samples and hands-on experience.

Snow Climate Design: Provide building envelope snow-climate design on new and existing structures for residential, commercial, industrial, institutional and historical buildings and facilities including replacement, repair and maintenance projects.

Snow Retention Systems: Design roofing snow retention systems including clips, brackets and fences for all types of roofing systems. All of our snow-retention systems are designed by a licensed structural engineer.

Structural Analysis & Design: Provide surveys and evaluations of building structures by licensed structural engineers to identify structural defects and deficiencies and the need for seismic upgrading. Provide design for new and existing structures including replacement and repairs.

Surveys, Evaluations, and Recommendations: Conduct visual surveys of existing building envelope conditions to determine the need for maintenance, repair or replacement. Surveys can include test cuts, core samples, material testing, infrared thermography and other non-destructive testing, aerial roof photographs, digital video and digital photos of surveys. Written reports include a description of conditions observed, evaluations, recommendations and estimated costs for design and construction work.

Ventilation (attic, rafter & crawl space): Determine if existing ventilation in attics, rafter spaces, and crawl spaces is adequate and complies with current building code requirements. Design proper ventilation of attics, rafter spaces and crawl spaces.



Related Topics

IBEC provides information and consulting services pertaining to the following building envelope topics:

- "American Thatch" roofing (steam-bent wood shingles)
- American Society for Testing and Materials (ASTM)
- Asbestos Containing Roofing Materials (ACRM) & abatement
- Asbestos shingles & siding
- Bird repellents
- Cold roof ventilation construction
- Contracts
- Cool roofs
- Decks
- Drainage and slope
- Drains
- Efflorescence
- ENERGY STAR energy performance rating system
- Expansion joints and area dividers
- Factory Mutual (FM) standards
- Fasteners
- Green roofs
- Guarantees (contractor and manufacturer)
- Gutters and downspouts
- International Building Code (IBC)
- International Residential Code (IRC)
- Inverted roof membrane assembly (IRMA)
- Laboratories
- LEED® (Leadership in Energy and Environmental Design) Green Building Rating System™
- Life-cycle costing
- Lightning protection
- Maintenance and repair
- Material testing
- Moisture problems
- Mold, mildew & dry rot
- OSHA regulations
- Pavers
- Photovoltaic collectors (solar panels)
- Roof conversions (flat to steep)
- Seismic upgrade of roofs and walls
- Sheet metal
- Skylights
- Stucco (EIFS and cementitious)
- Temporary roofing
- Thermal performance and estimated energy costs
- Underwriters Laboratories (UL) standards
- Vapor retarders
- Vegetative roof systems
- Walkways and walkpads
- Warranties (contractor and manufacturer)
- Wind design



Distinctive Experience

IBEC provided independent consulting and roofing management for the State of Utah Division of Facilities Construction and Management (DFCM) from 1992 to 1996.

IBEC is the only independent consulting company to provide ongoing, long-term consulting and roof management services for the State of Utah Division of Facilities Construction Management.

- Managed new roofing, reroofing and roofing repairs on more than 3,000 buildings
- Prepared and managed yearly roofing budgets up to \$6,000,000
- Reviewed plans for new construction and reroofing as well as specifications for roofing and waterproofing projects
- Helped develop roofing policies and procedures for DFCM staff
- Developed and implemented a state roof management program and assisted state agencies and institutions with other roofing inspection and maintenance programs
- Helped develop roofing design criteria for private sector firms performing design work for the State of Utah
- Helped develop criteria for qualifying roofing manufacturers, contractors, architects and engineers performing work for the State of Utah
- Worked with and coordinated the work of architects and engineers who provided new roofing and reroofing design and project coordination services
- Helped write a master plan specification for built-up roofing
- Helped write guarantees and warranties
- Performed roof surveys for the purpose of preparing budgets
- Performed roof observations and evaluations to determine the need for roofing repairs, maintenance or replacement
- Developed and managed the Utah State Correctional Industries (UCI) Inmate Roofing Repair Program, which included the following:
 - Identified equipment and materials
 - Trained UCI foreman and inmate staff
 - Scheduled all roofing repair and maintenance work



Type of Projects

IBEC has provided consulting services on all types of structures, including the following:

- Airport hangers
- Apartment buildings
- Bank buildings
- Below grade structures
- Cabins
- Church buildings
- College and university buildings
- Commercial buildings
- Computer manufacturing facilities
- Condominiums
- Correctional facilities
- Federal, state and local government facilities
- Historical buildings
- Hospitals
- Hotels and motels, including high rise hotels
- Industrial buildings
- Library buildings
- Lodges
- Manufacturing buildings
- Military facilities
- Museums
- Office buildings, including high rise buildings
- Parking garages and terraces
- Plaza decks
- Post office buildings
- Residences
- Schools
- Shopping malls
- Ski resorts
- Water tanks

Noteworthy Projects

IBEC has extensive experience providing consulting services for challenging and unique roofing and building envelope related projects, including:

- APX Building, Orem, Utah
- Brian Head Ski Resort, Brian Head, Utah
- BYU Marriott Center, Provo, Utah
- Canyons Ski Resort, Park City, Utah
- Cathedral Church of St. Mark, Salt Lake City, Utah
- Deer Valley Club, Park City, Utah
- Deer Valley Ski Resort, Park City, Utah
- Delta Airlines Hangar Building, Salt Lake City, Utah
- Eagle Gate Tower Office Building, Salt Lake City, Utah
- Fashion Place Mall, Murray, Utah
- Gateway Mall, Salt Lake City, Utah
- Grand America Hotel, Salt Lake City, Utah
- Greek Orthodox Church, Salt Lake City, Utah
- J C Penney Office Building, Salt Lake City, Utah
- LDS Church Office Building, Salt Lake City, Utah
- Matheson Court House Building, Salt Lake City, Utah
- Micron Technology Building, Lehi, Utah
- Northwest Pipeline Building, Salt Lake City, Utah
- Park City Ski Resort, Park City, Utah
- Rio Grande Railroad Station, Salt Lake City, Utah
- Rossignol Mountain Center, Park City, Utah
- Samoa Temple, Apia, Samoa
- Sinclair Office Building, Salt Lake City, Utah
- Snowbird Ski Resort, Snowbird, Utah
- Solitude Ski Resort, Solitude, Utah
- St. Regis Hotel, Park City, Utah
- Sun Valley Convention Center, Sun Valley, Idaho
- Union Pacific Railroad Station, Evanston, Wyoming
- University of Utah Marriott Library, Salt Lake City, Utah
- Utah State Governor's Mansion, Salt Lake City, Utah
- Utah State University, Logan, Utah
- Utah Valley State College, Orem, Utah
- Weber State University, Ogden, Utah
- Wood River YMCA, Ketchum, Idaho

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Clients

Our clients have included:

- Architects
- Attorneys
- Business owners
- Colleges and universities
- Contractors
- Federal, state, county and city governments
- Home owners
- Home owners associations
- Insurance companies
- Property management companies
- Realtors
- Religious organizations
- School districts

Organization Memberships

IBEC maintains membership in the following local and national professional organizations:

National Roofing Contractors Association (NRCA)
Roofing Consultants Institute (RCI)
Utah Roofing Contractors Association (URCA)
Western States Roofing Contractors Association (WSRCA)

Insurance

IBEC has professional liability (errors and omissions), general liability, worker's compensation and commercial automobile insurance. Certificates of insurance are provided upon request.

References

Specific project information with photographs, client references and contacts is available on request.