



**Dabney-Buehler Hall  
Courtyard Plaza Waterproofing  
The University of Tennessee  
Knoxville, Tennessee**

Courtyard Waterproofing	5,818 s.f.
Construction Cost	\$267,000
Cost/s.f.	\$45.89
Guardrail Replacement	\$7,762
Completion Date	2014



The existing courtyard plaza on the northern end of Dabney-Buehler Hall had been poorly waterproofed around the perimeter which was quite apparent after a heavy rain. The accumulation of dirt, debris, and vegetation growth between the concrete paver joints greatly contributed to the lack of surface drainage around the courtyard as well. In addition to water entering around the perimeter of the courtyard after a heavy rainfall, the existing EPDM membrane lap splices beneath the concrete pavers were periodically susceptible to leaks and water would enter the chemistry laboratory below.



Existing Perimeter

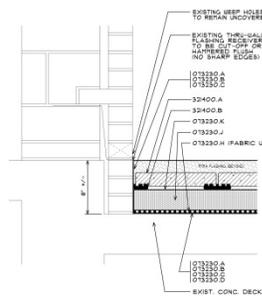


Exist. EPDM Beneath Pavers

The scope of work included a complete removal of the existing concrete pavers, EPDM waterproofing membrane, and existing insulation down to the concrete deck. The new waterproofing system would be designed and assembled as an "inverted roof membrane assembly (IRMA)" by utilizing a maintenance free liquid applied PMMA waterproofing system reinforced with polyester fleece. This system is maintenance free and adheres to vertical surfaces with no need for termination bars or metal counterflashings.



The overburden materials would consist of a composite geotextile drainage mat (with filter fabric) laid directly over the new PMMA waterproofing, a 60 psi extruded polystyrene insulation board (3" thick) laid directly over the drainage mat, and a black filter fabric laid directly over the insulation to conceal the color of the new extruded insulation board.



The multi-colored concrete pavers would be installed over the entire assembly using prefabricated shims/tabs for leveling the pavers. The surface drainage of the courtyard would be addressed with slotted pavers at 18 locations where existing roof drain bowls were modified beneath.



Existing Courtyard on the North End of Dabney-Buehler Hall



New Courtyard on the North End of Dabney-Buehler Hall