

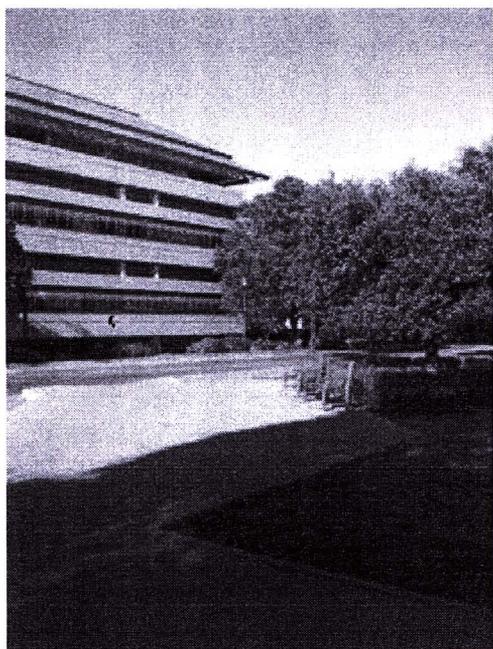
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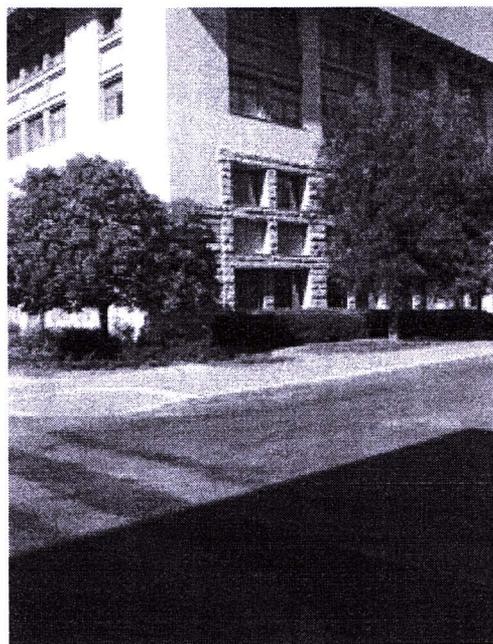
รูปภาพที่ใช้เป็นฐานข้อมูลในกระบวนการเรียนรู้มีทั้งหมด 30 รูป จาก
ฐานข้อมูลของงานวิจัยการเรียนรู้จากสามมิติจากภาพ ซึ่งประกอบไปด้วยความสัมพันธ์ทั้งหมด
4420 ความสัมพันธ์ ดังนี้



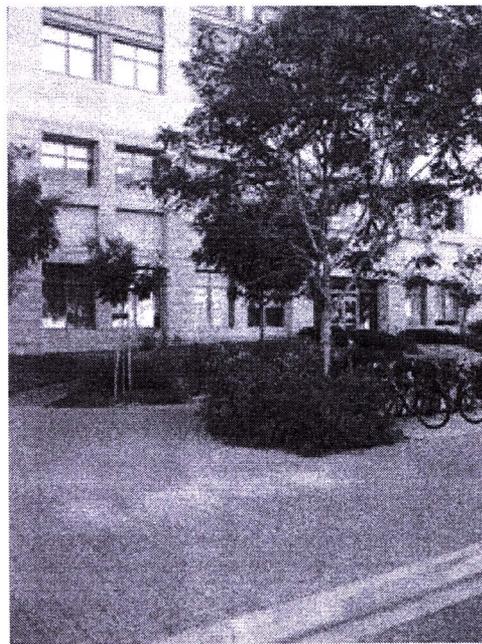
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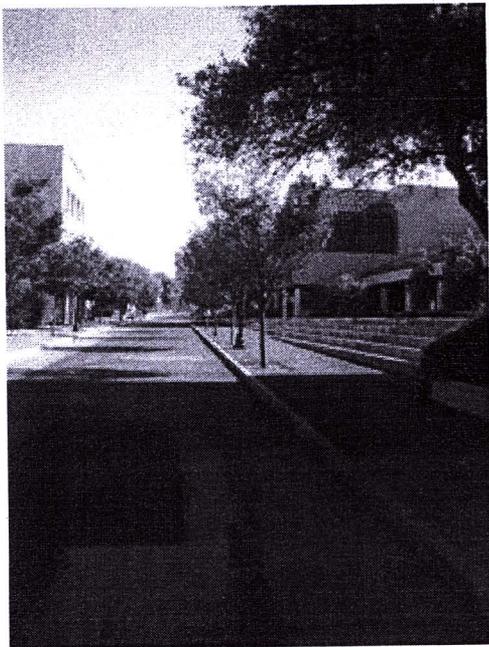
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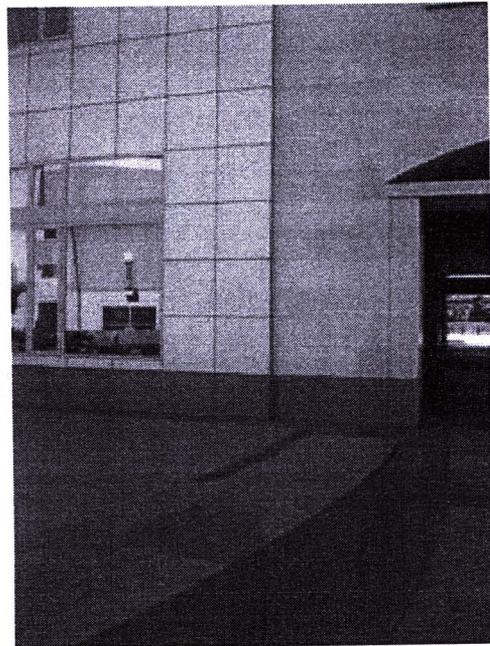
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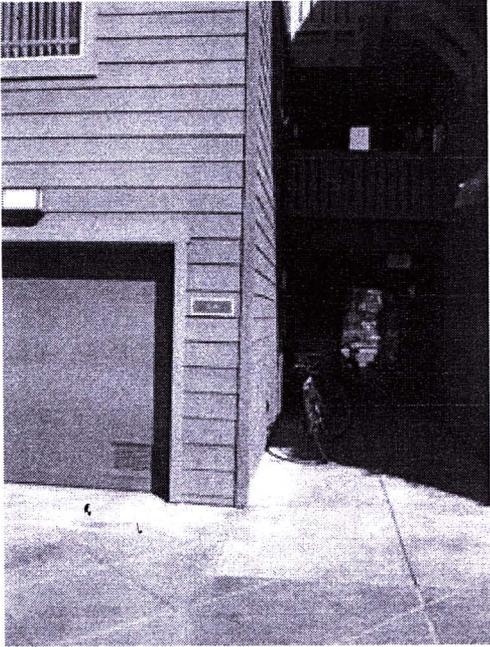
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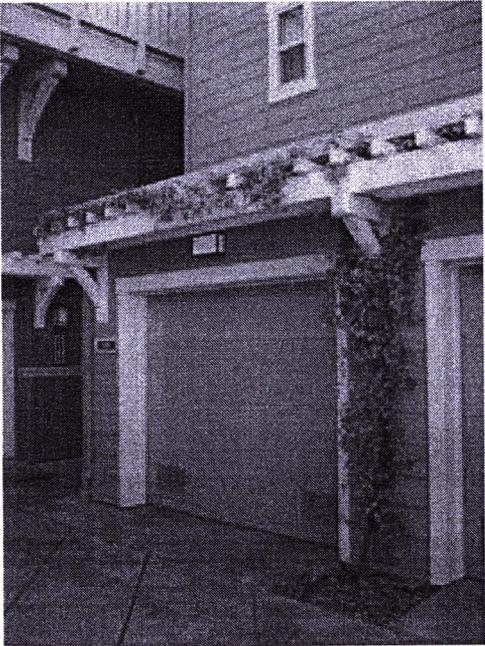
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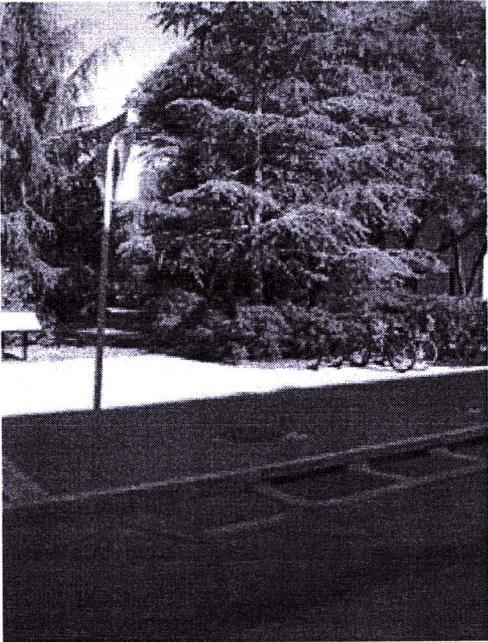
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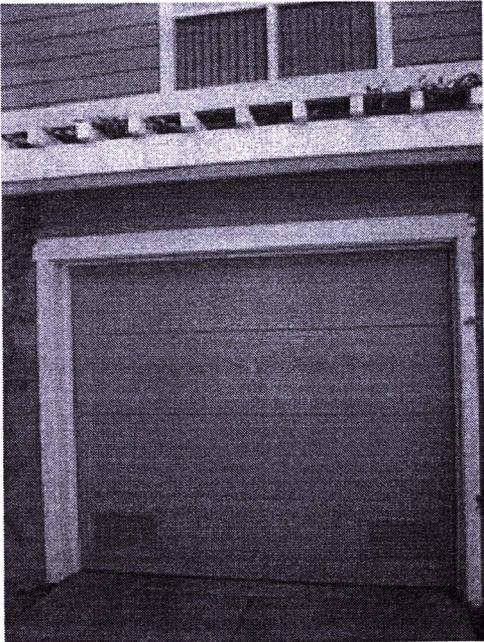
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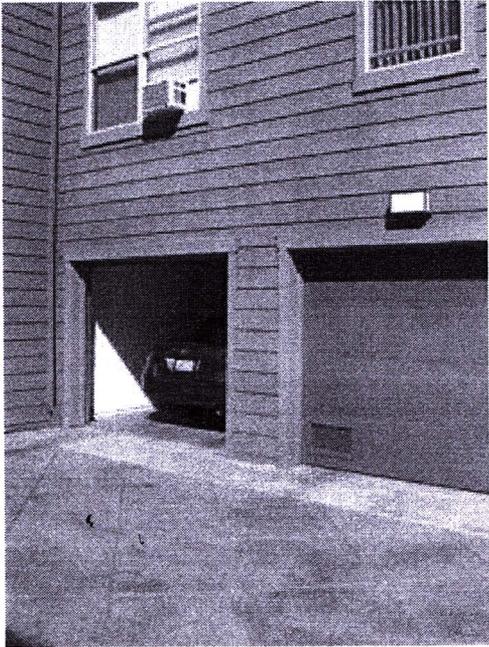
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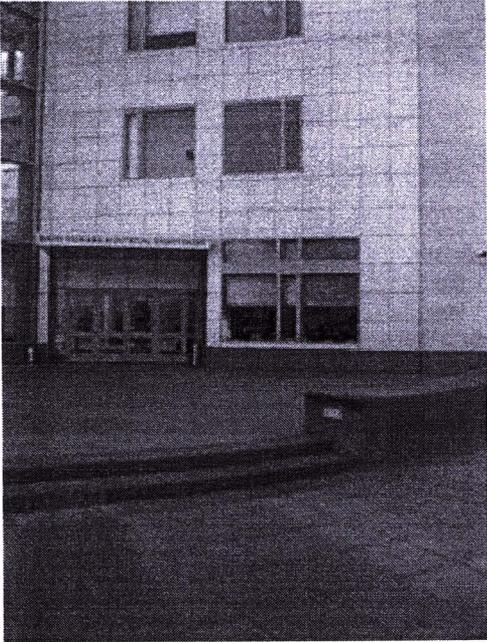
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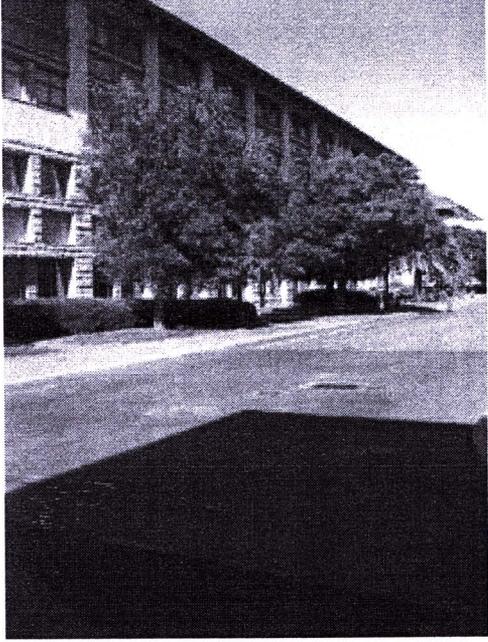
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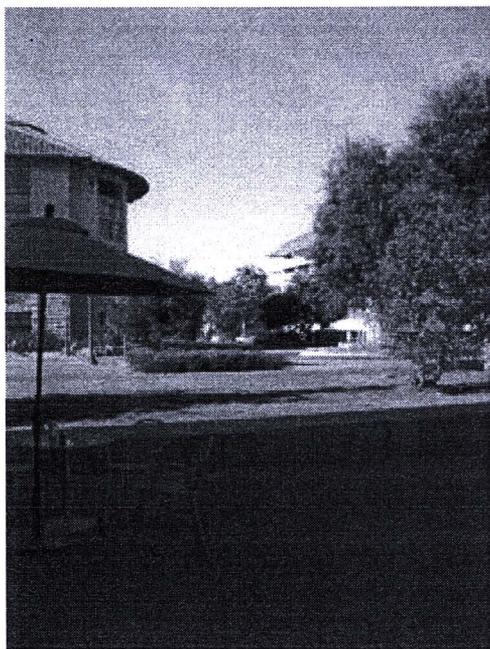
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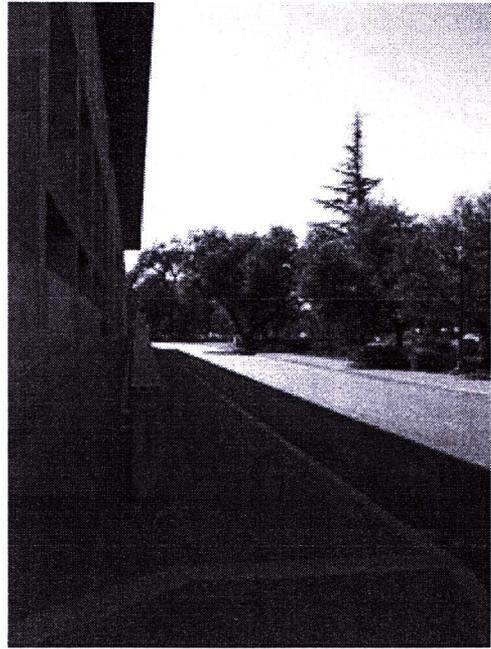
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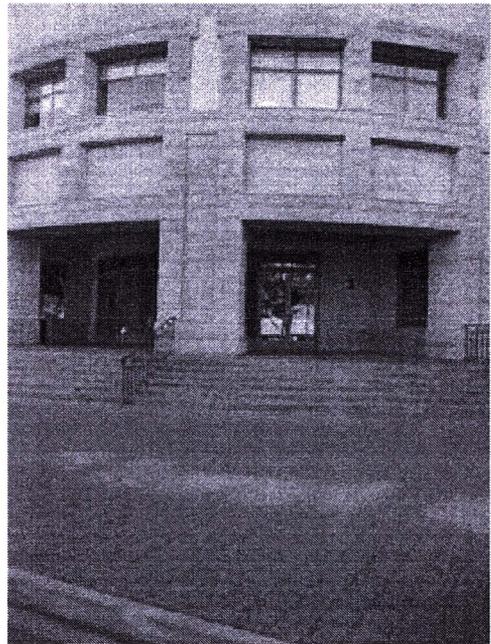
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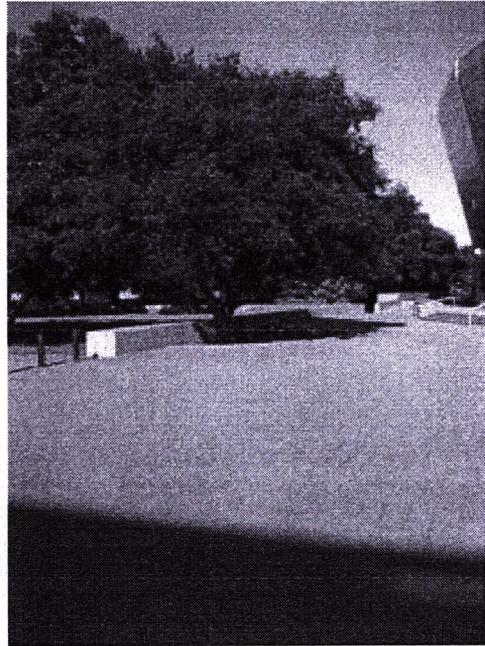
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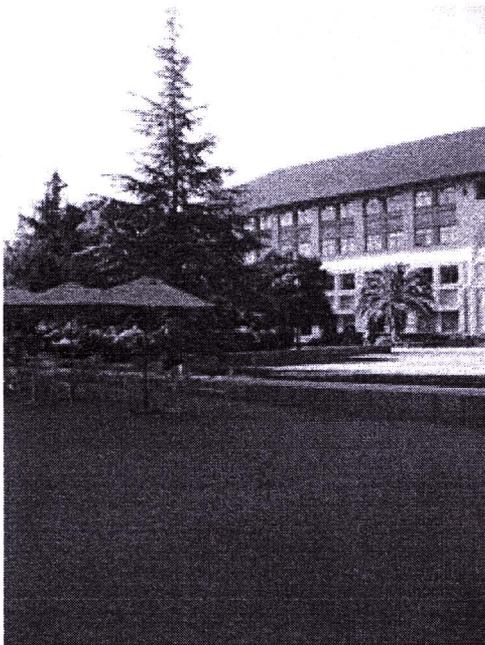
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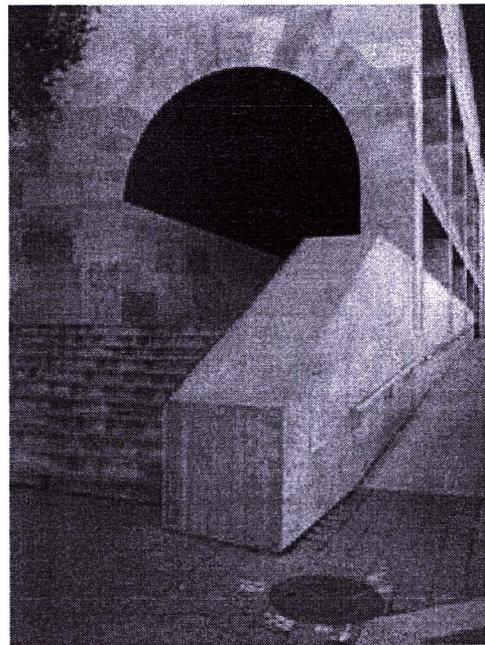
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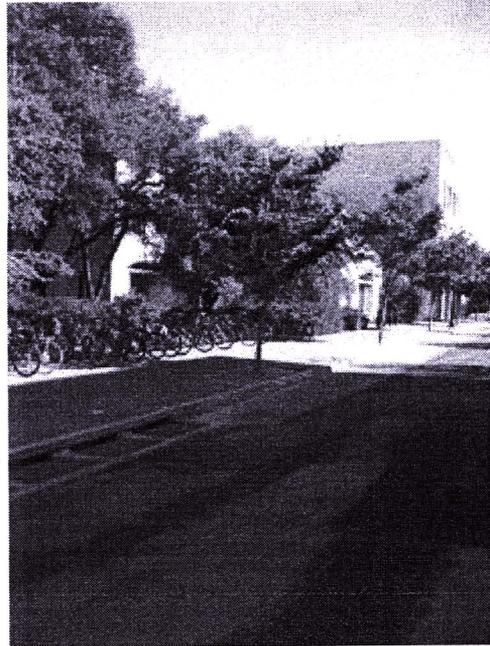
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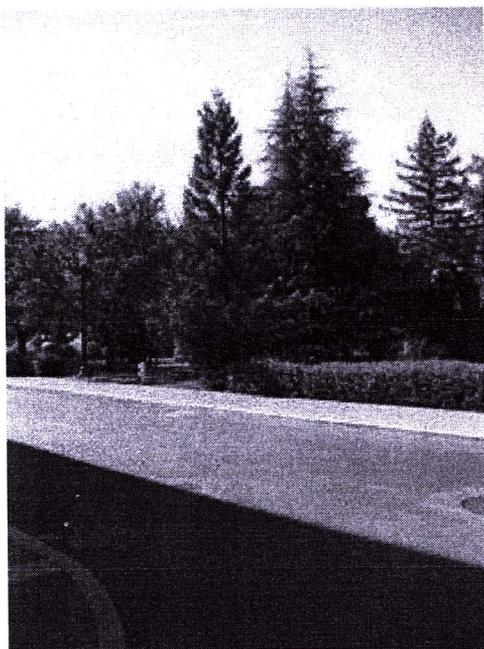


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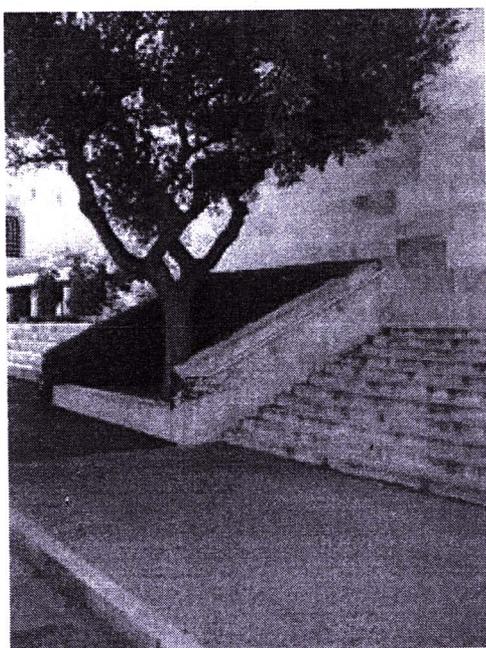
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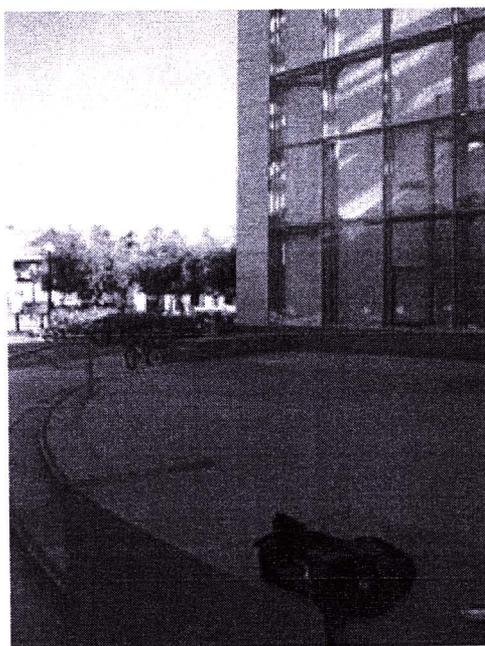
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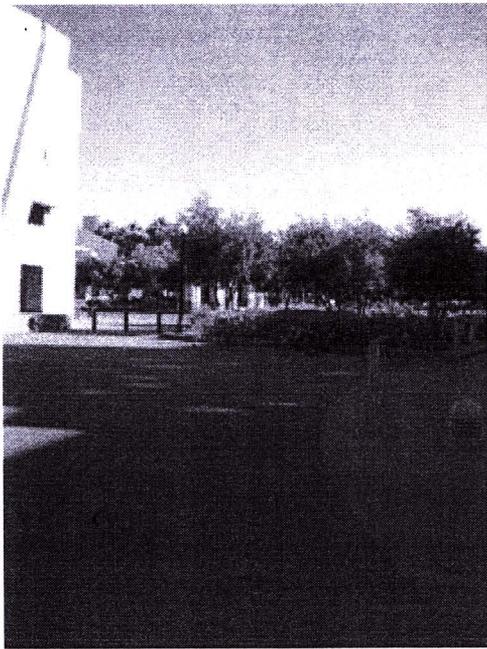
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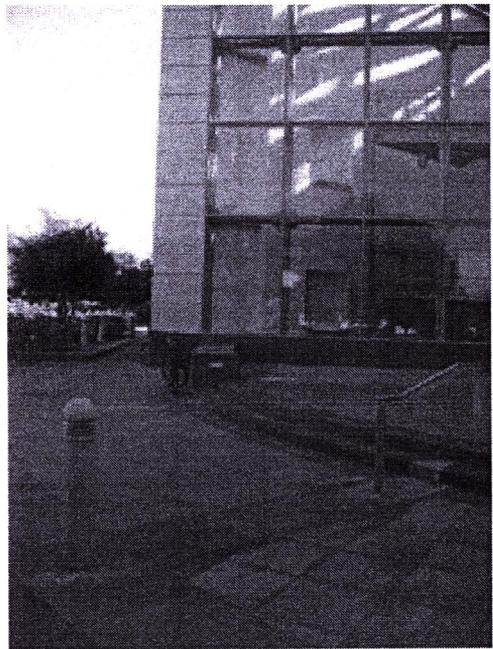
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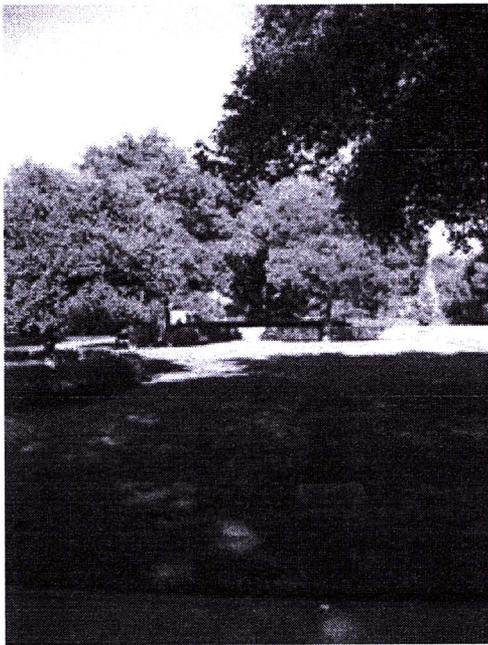
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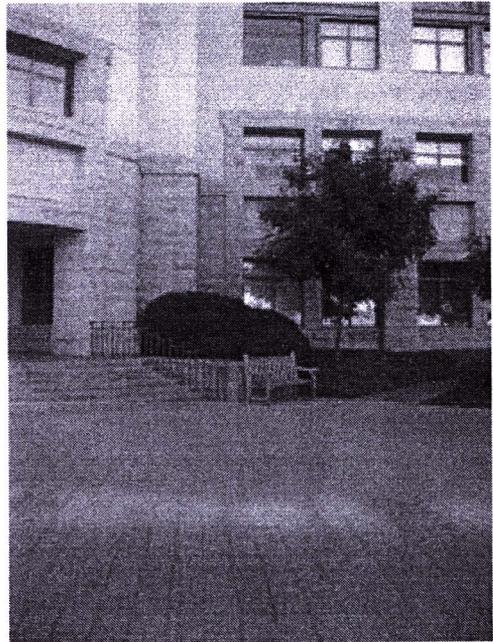
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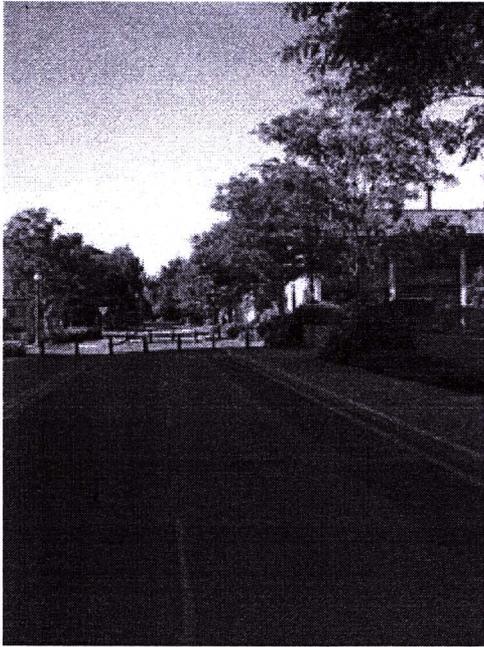
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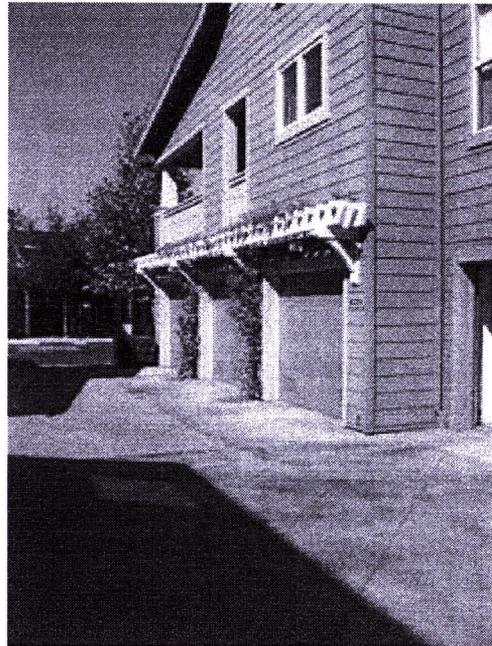
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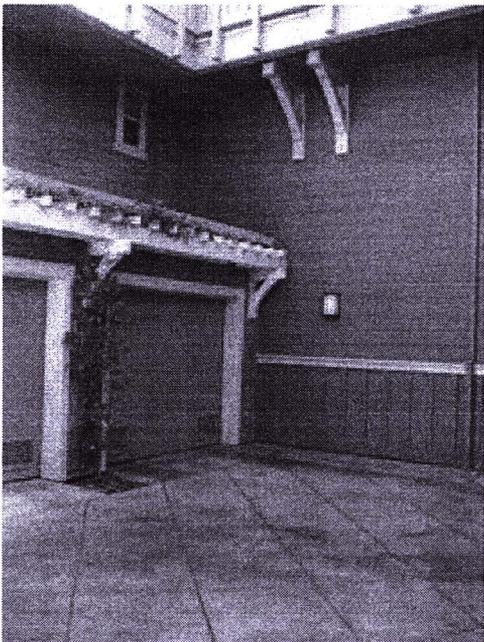
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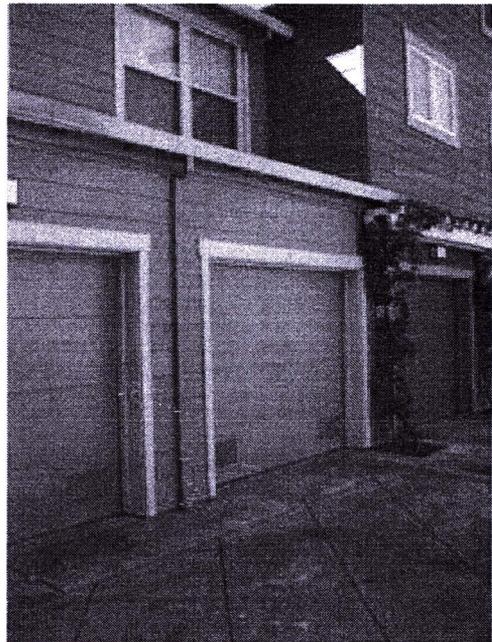
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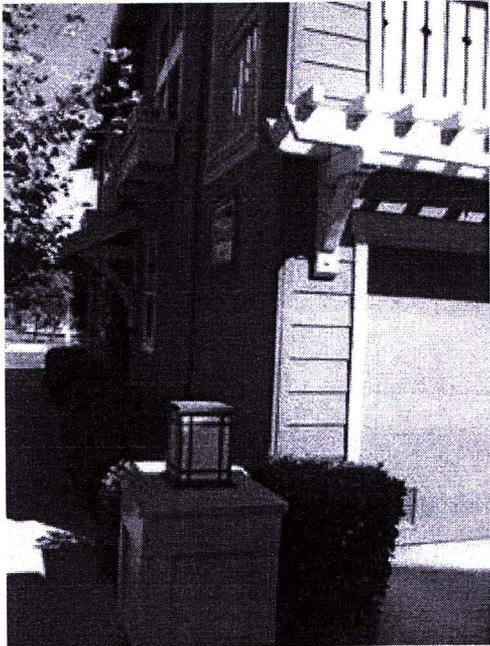
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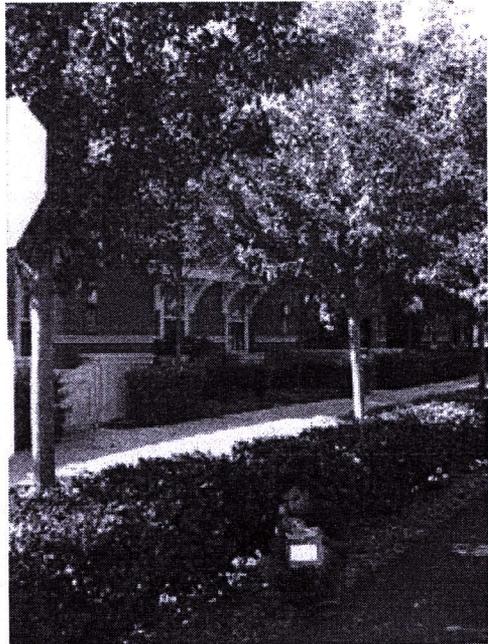
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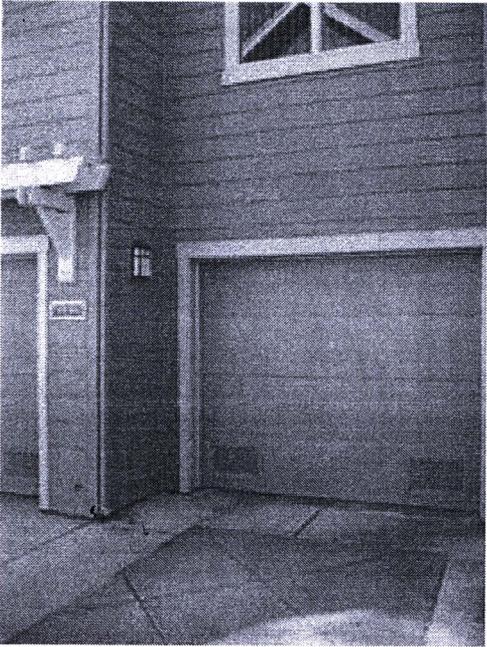
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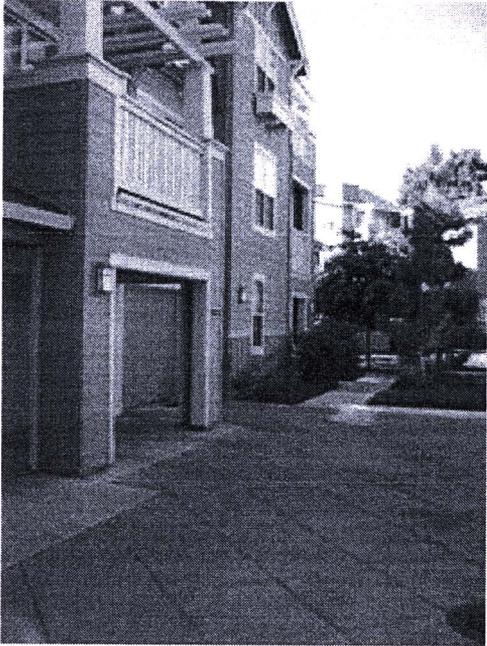
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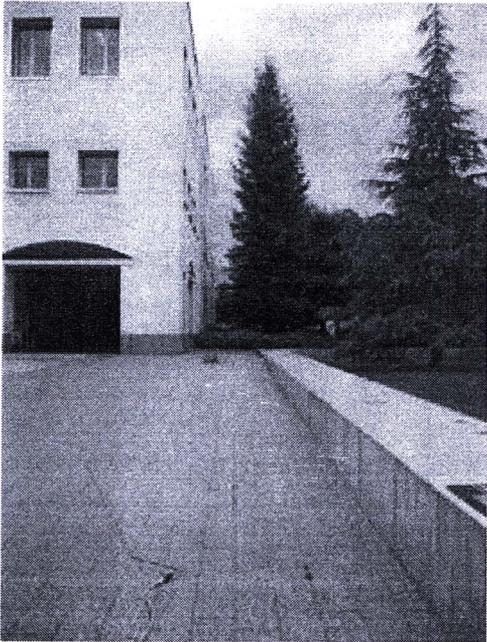
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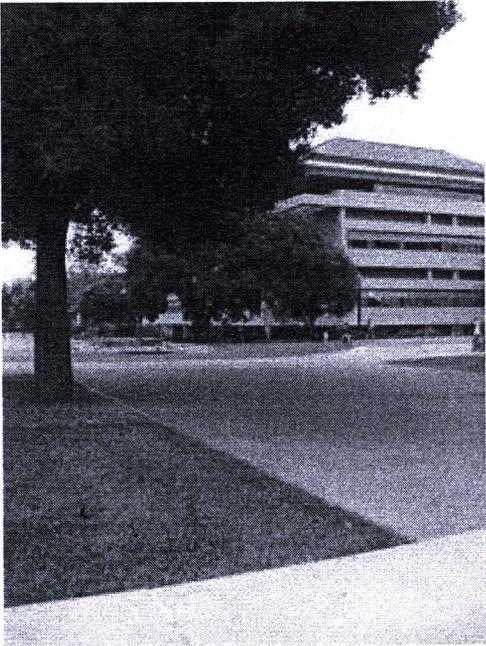
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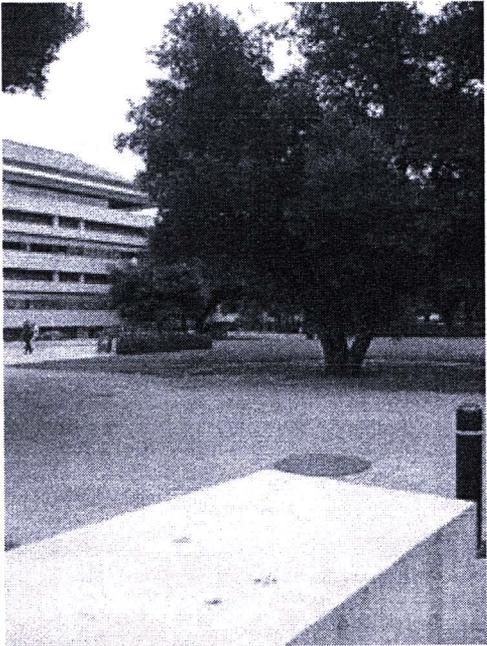
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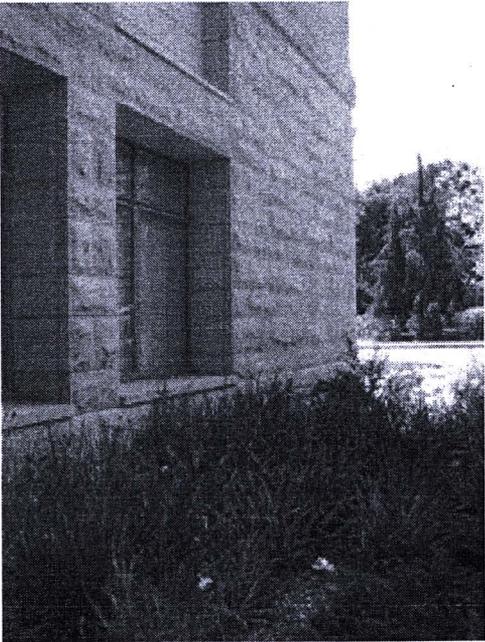
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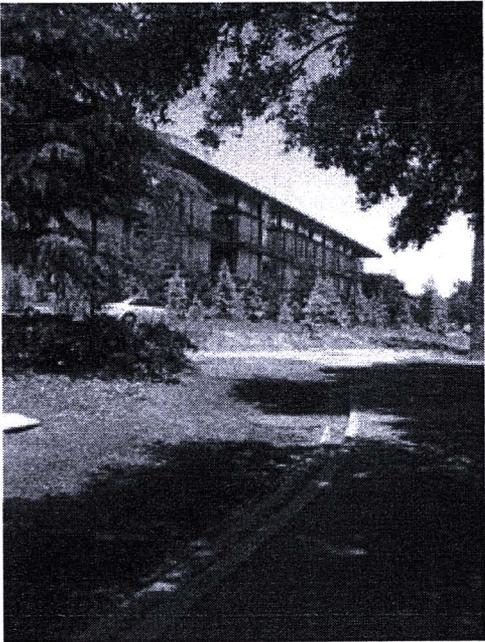
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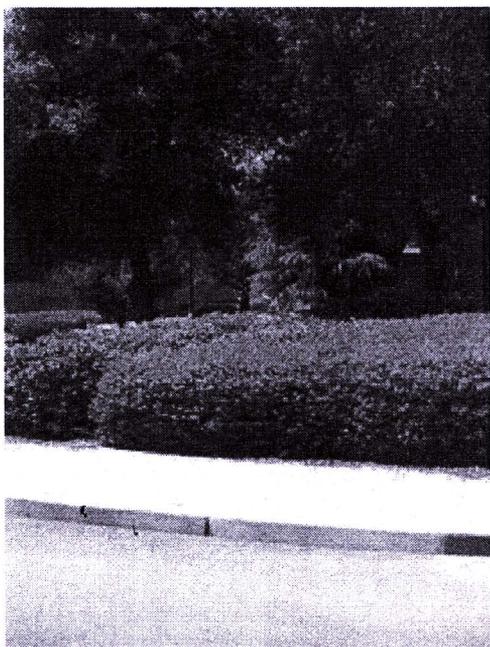
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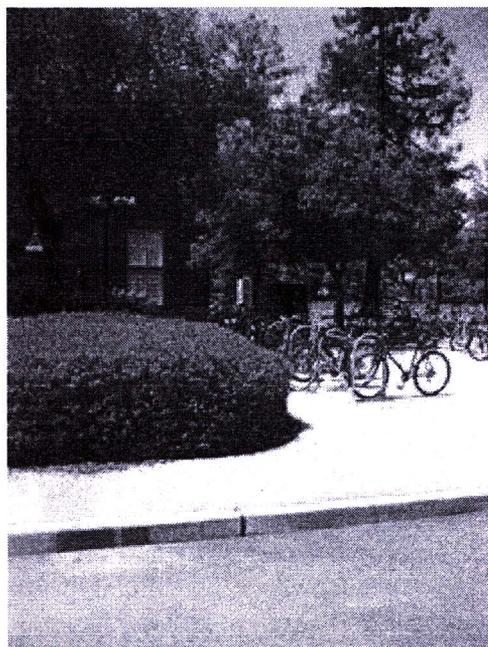
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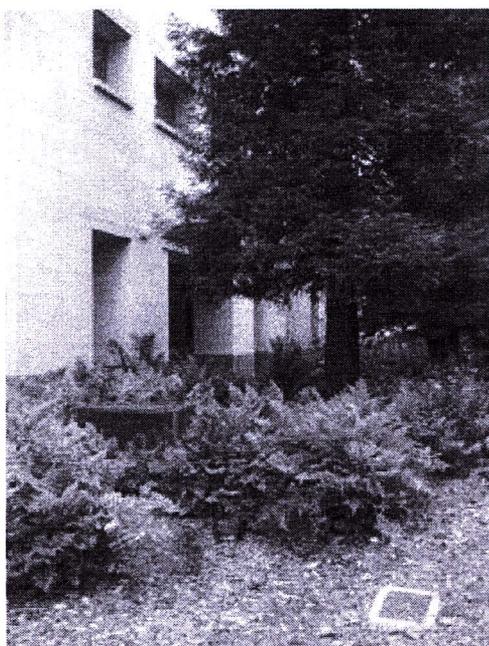
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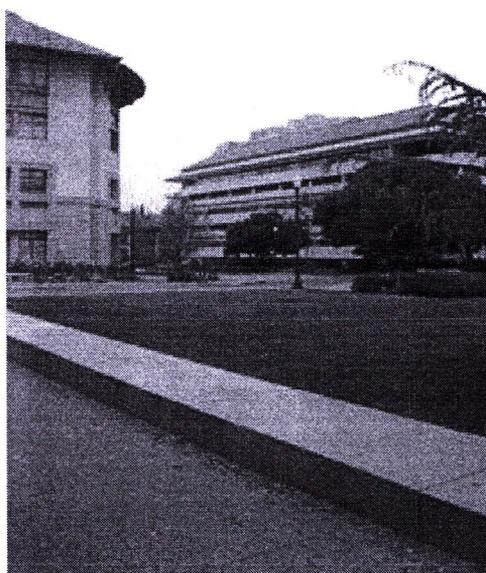
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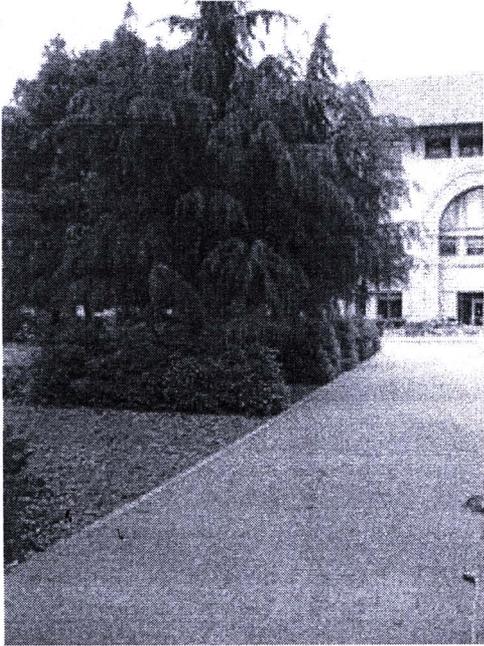
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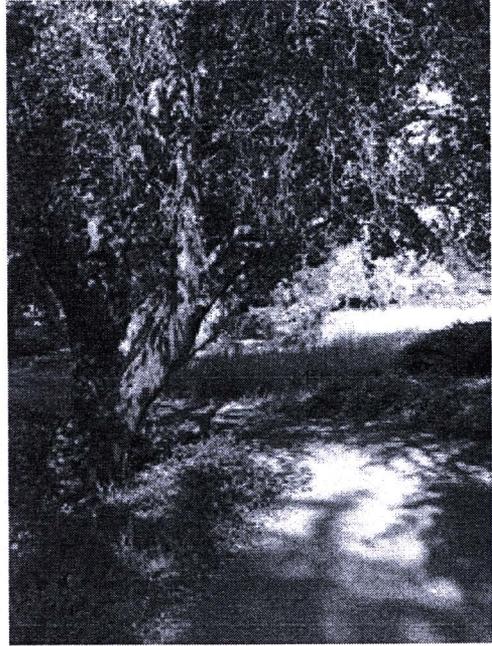
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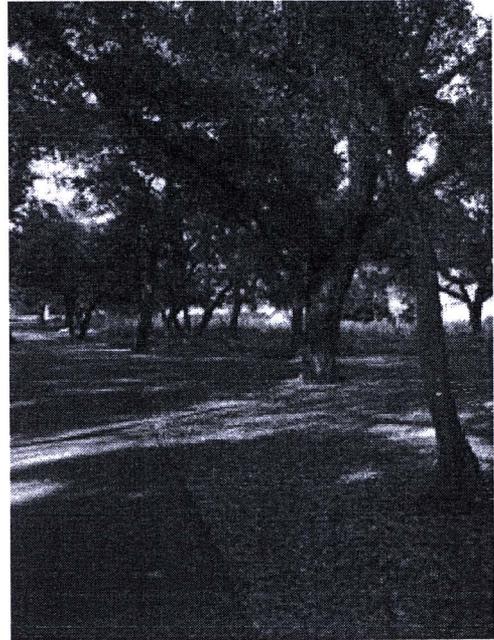
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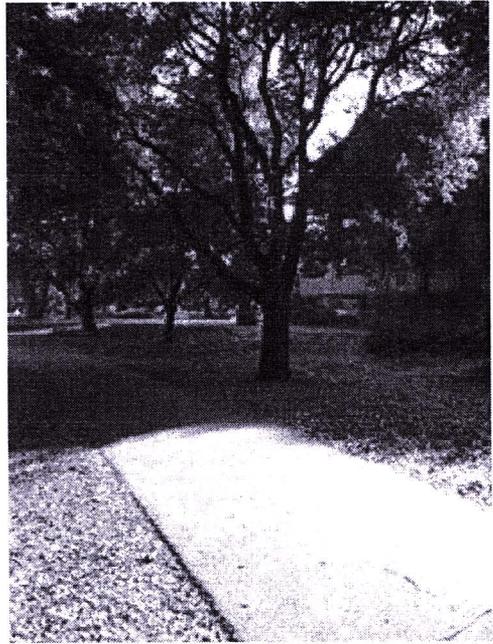
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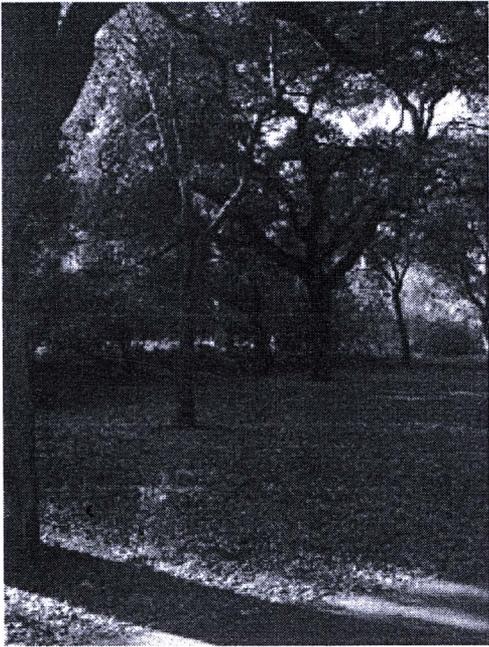
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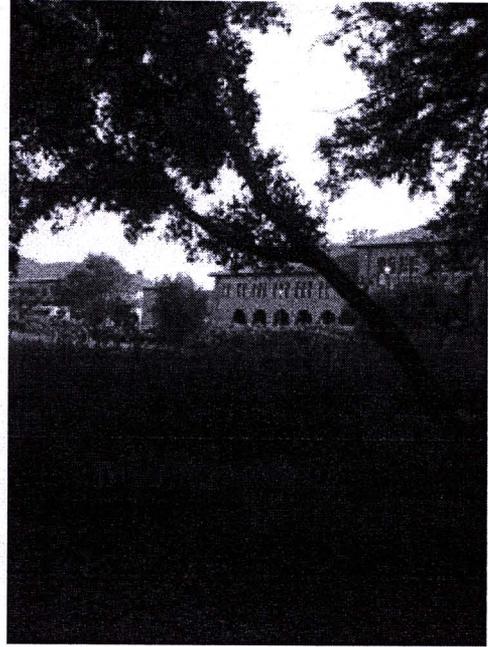
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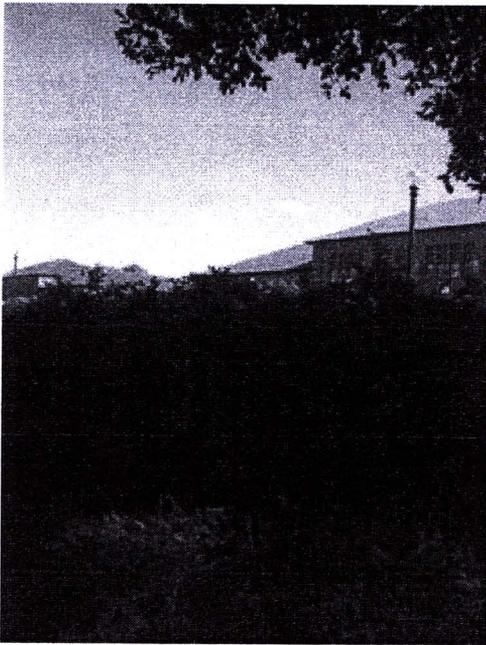
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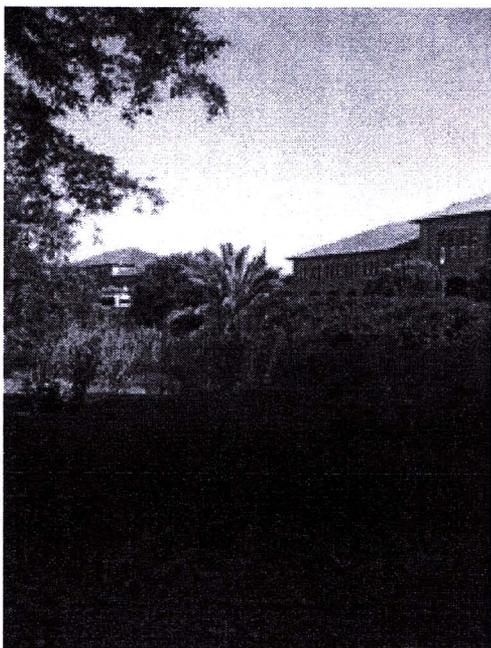
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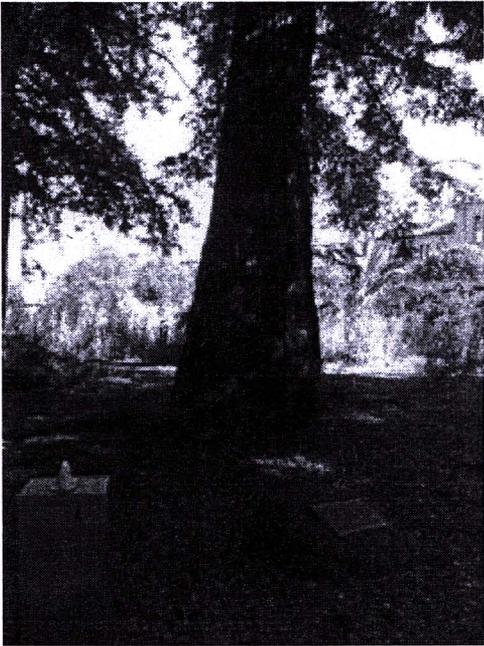
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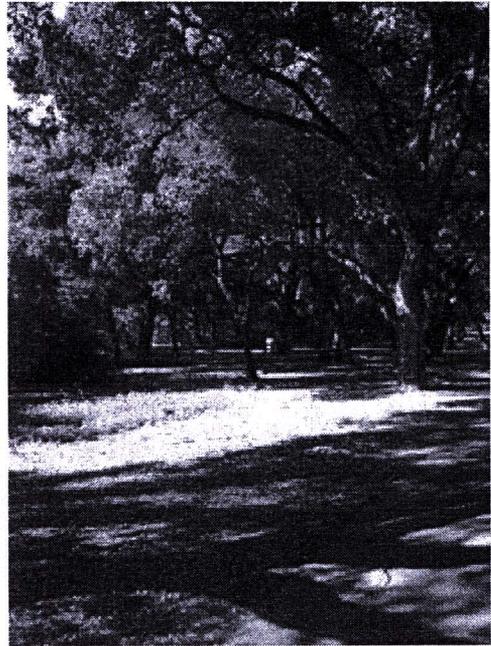
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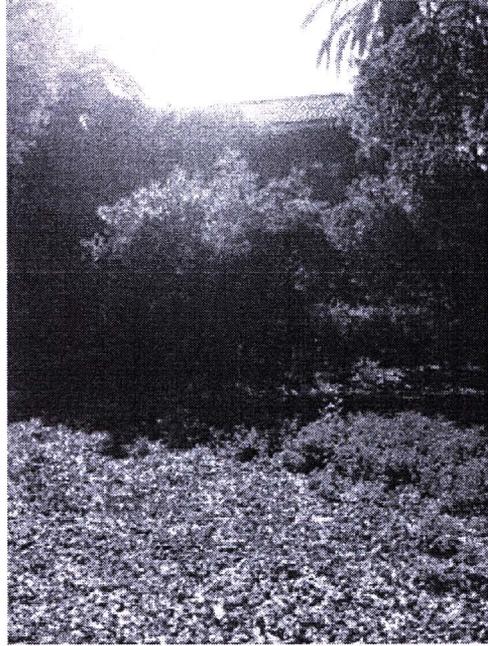
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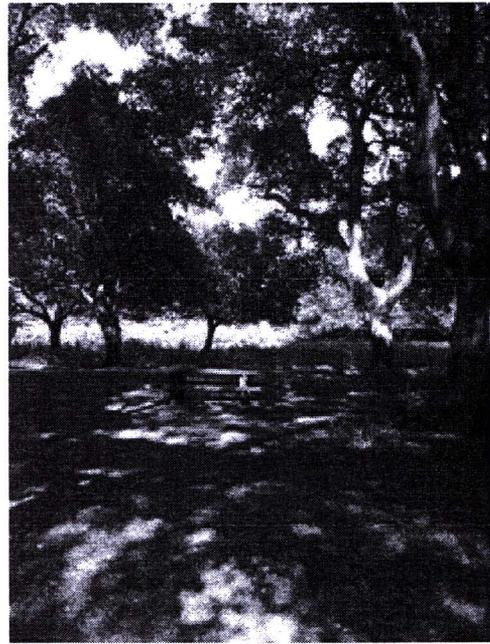
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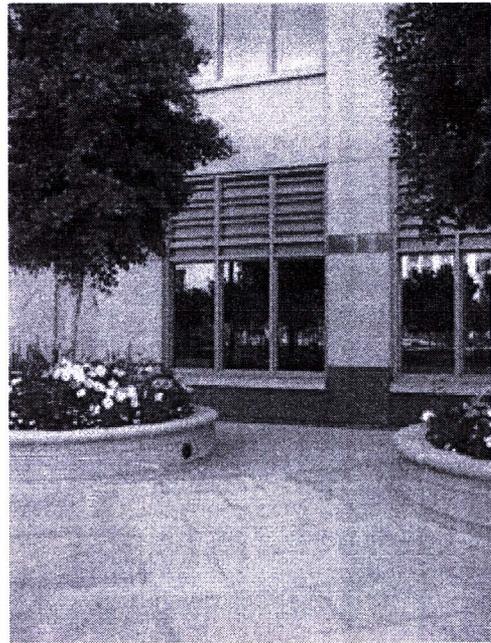
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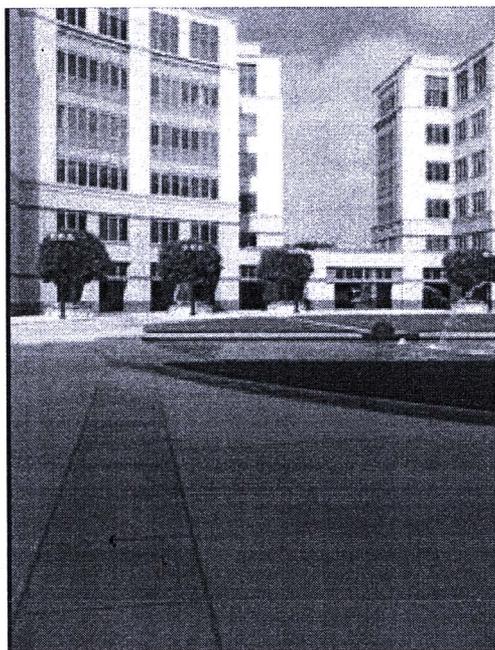
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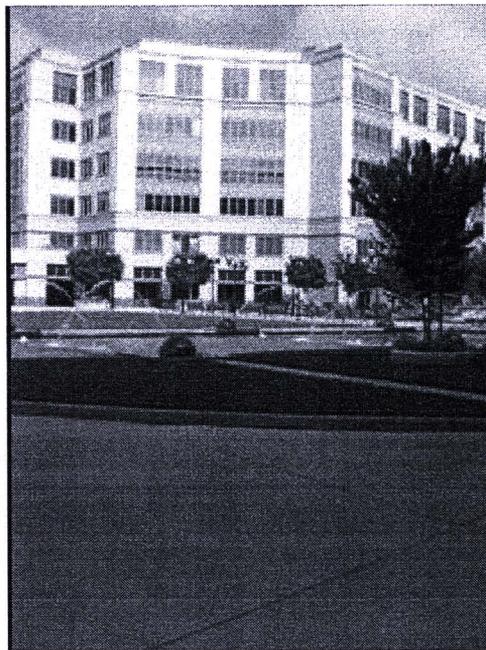
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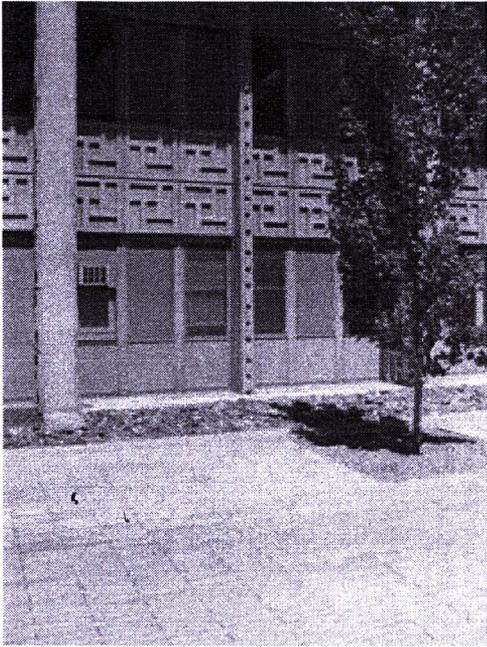
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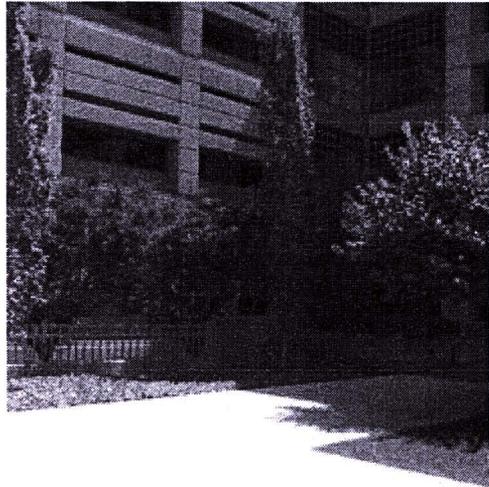
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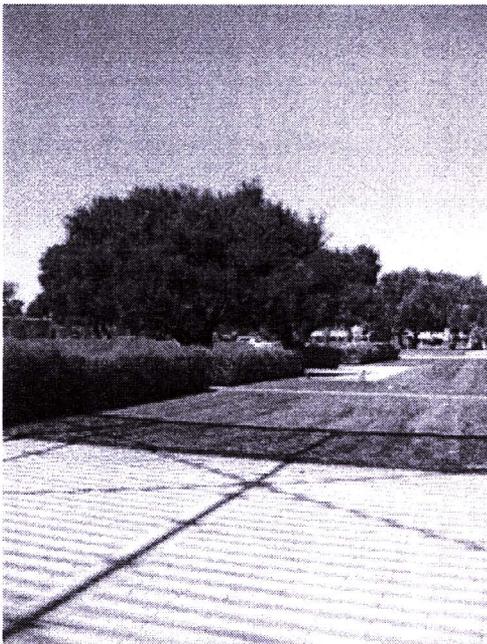
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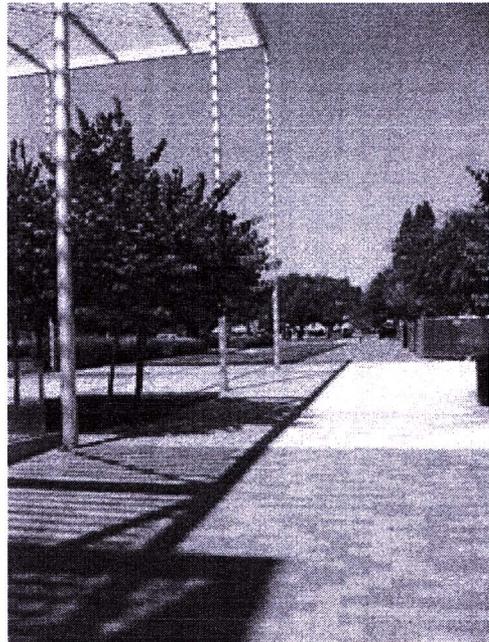
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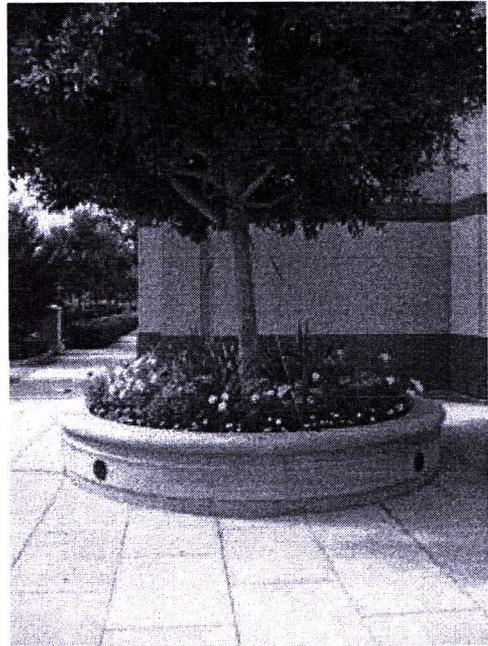
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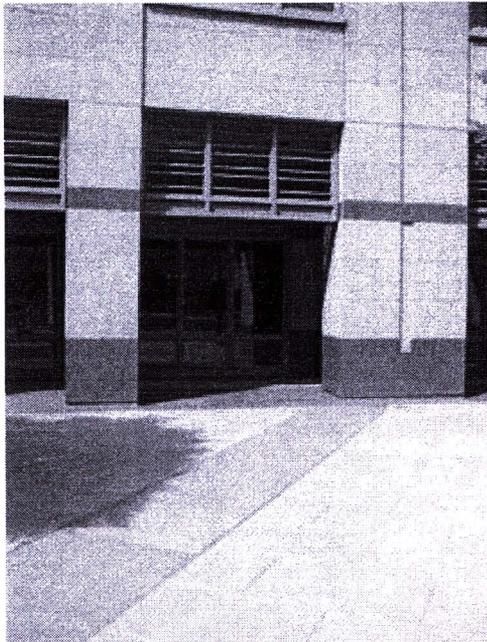
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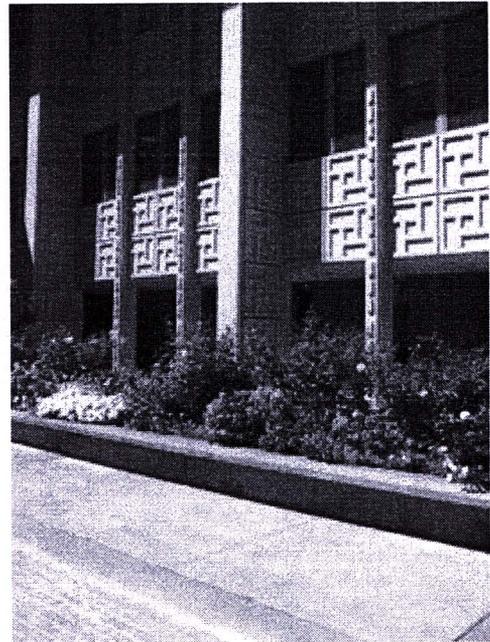
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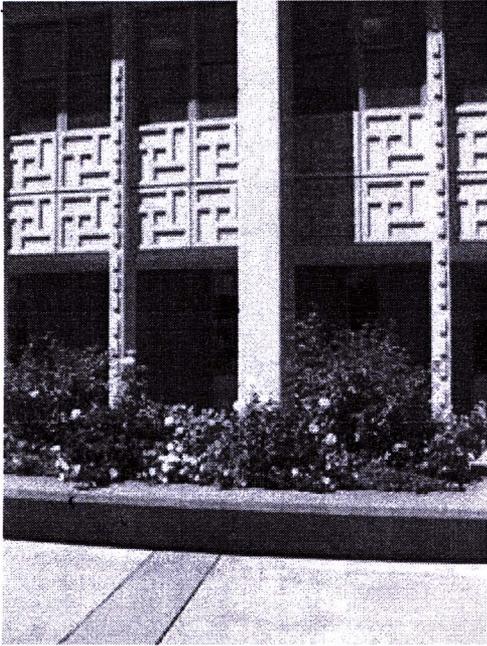
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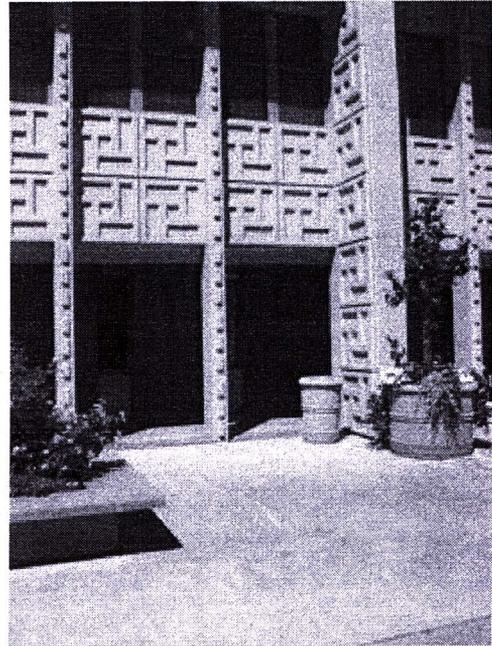
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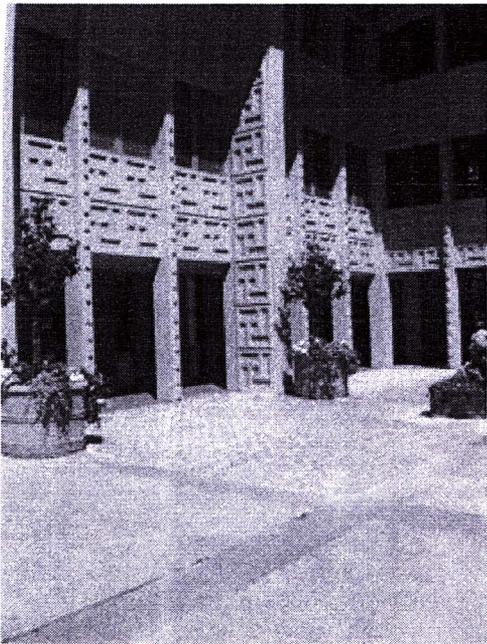
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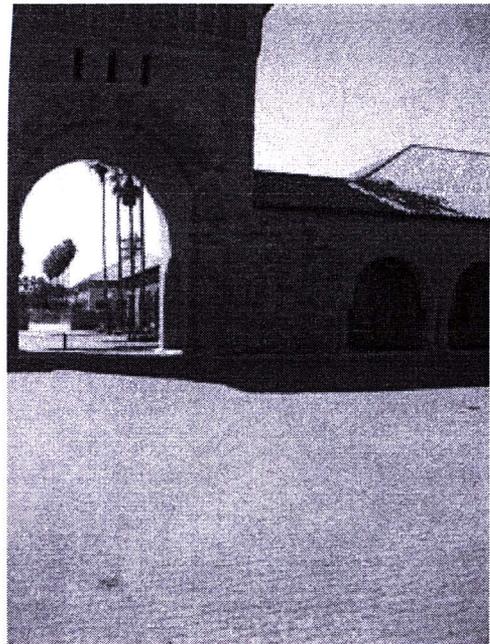
73)



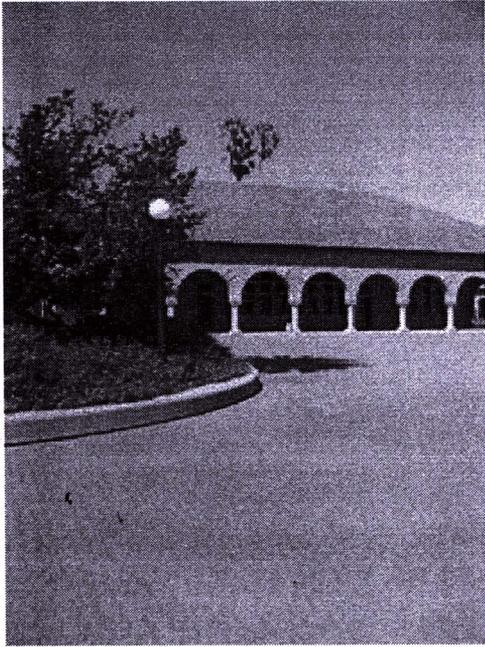
74)



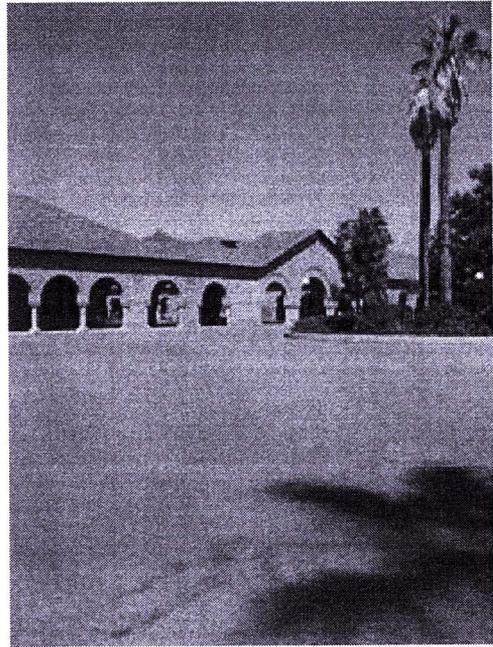
75)



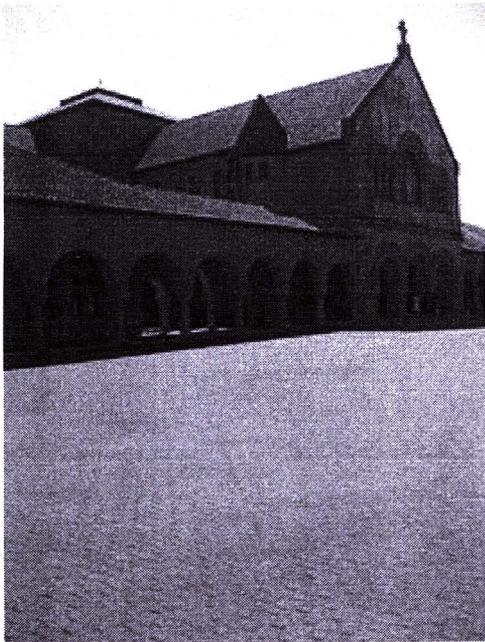
76)



77)



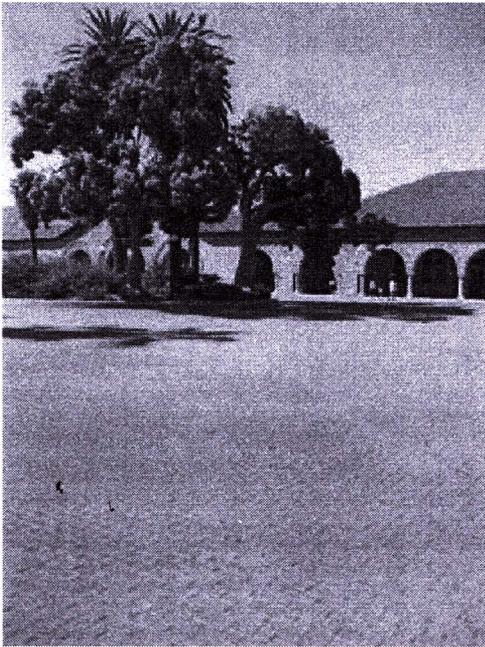
78)



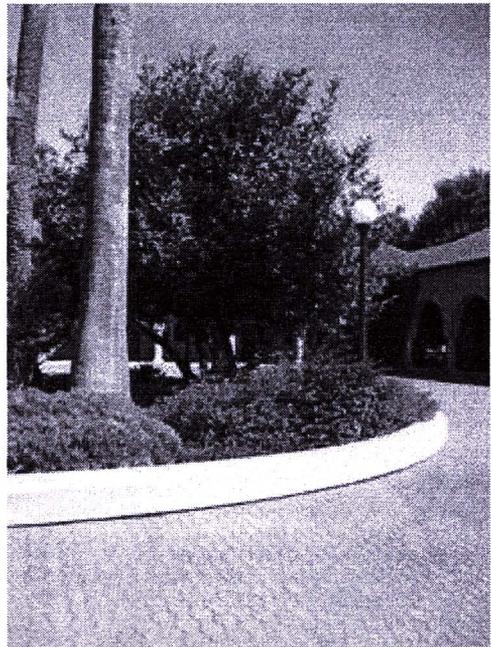
79)



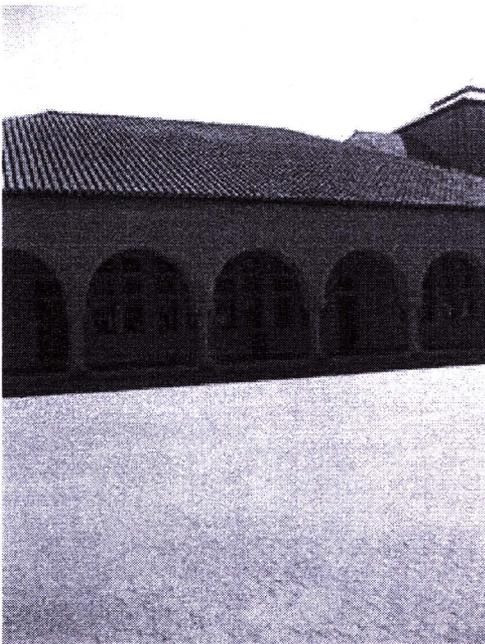
80)



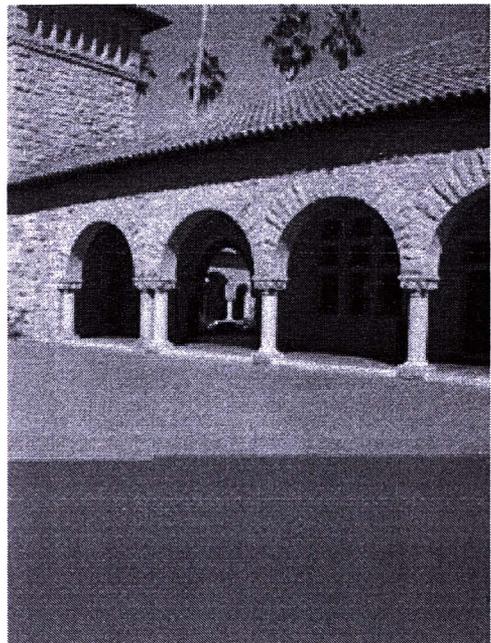
81)



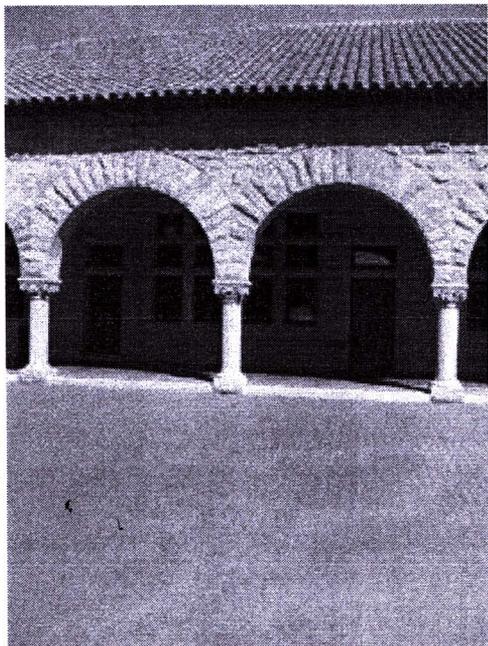
82)



83)



84)



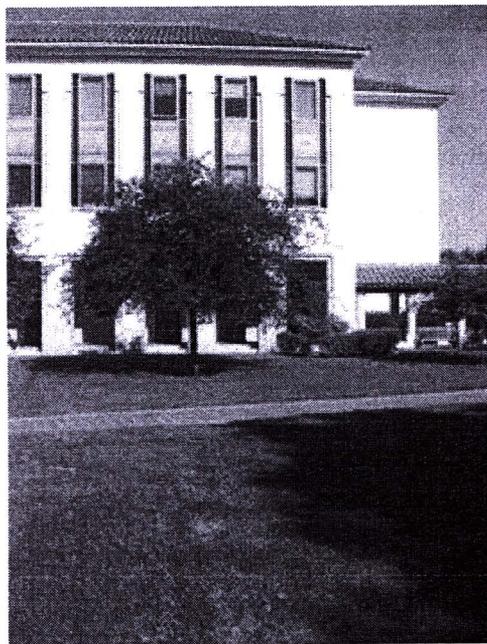
85)



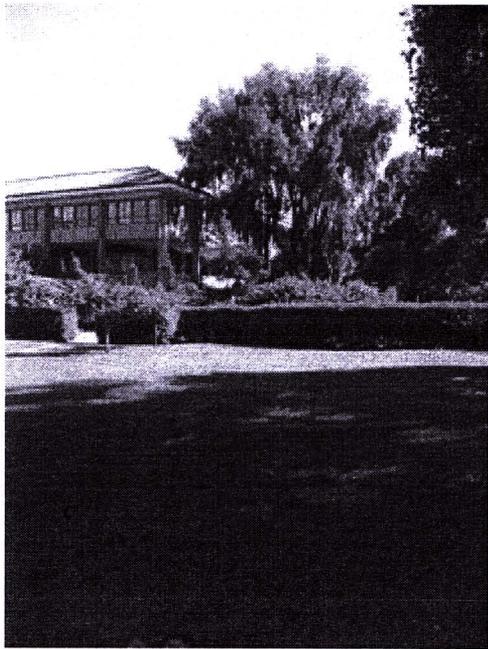
86)



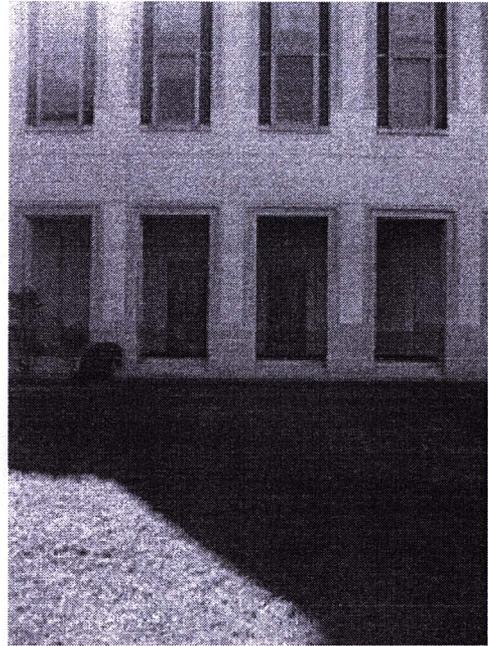
87)



88)



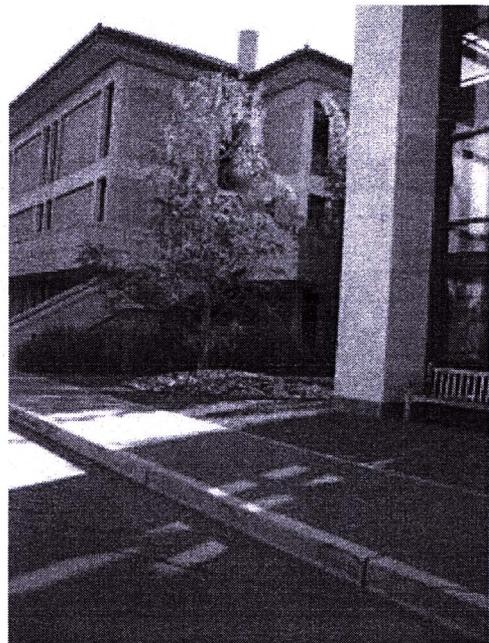
89)



90)



91)



92)



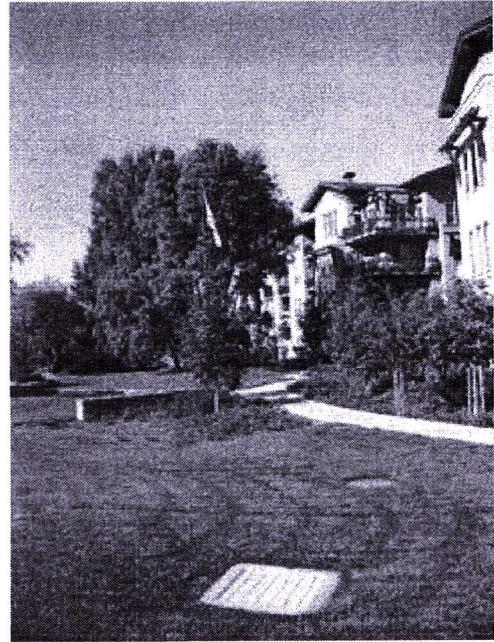
93)



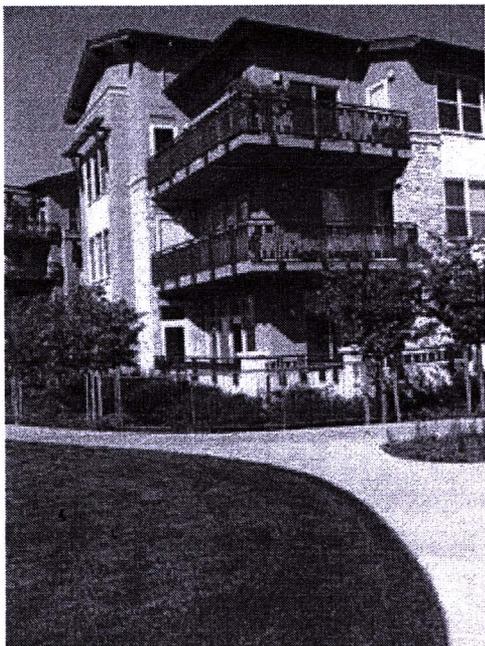
94)



95)



96)



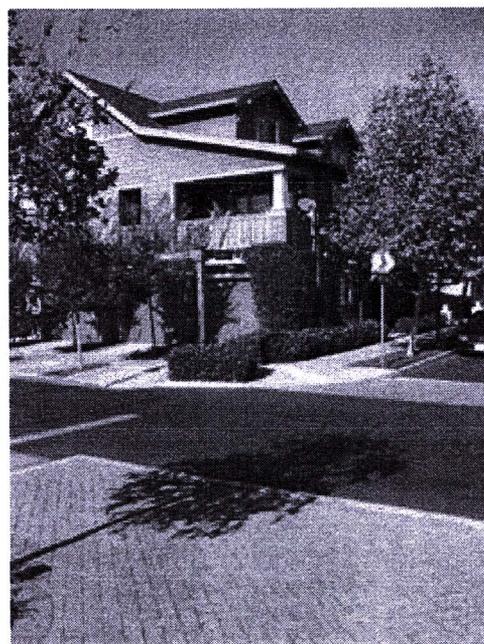
97)



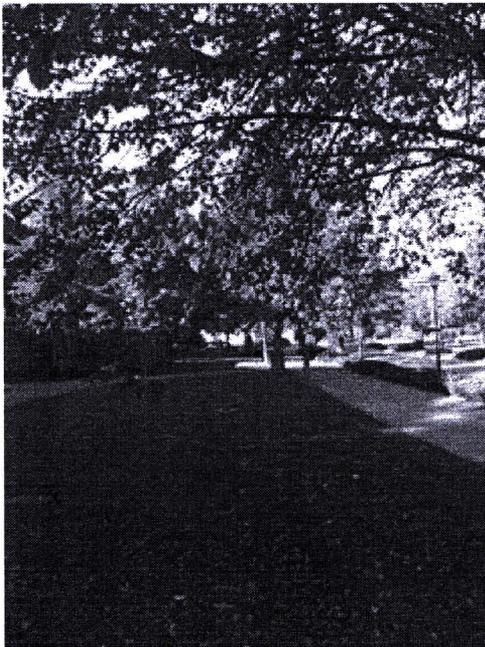
98)



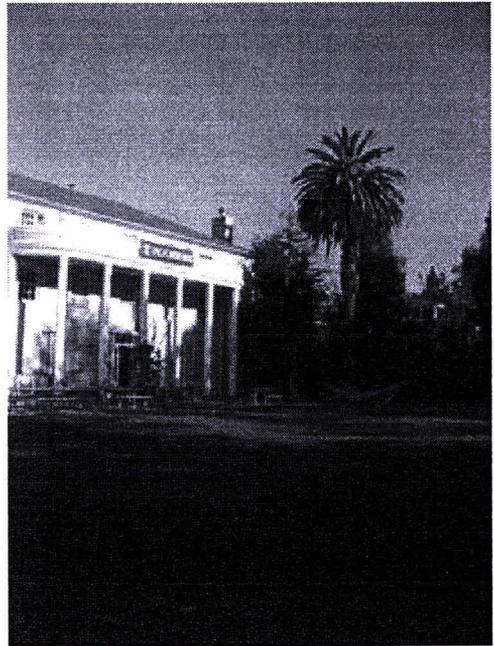
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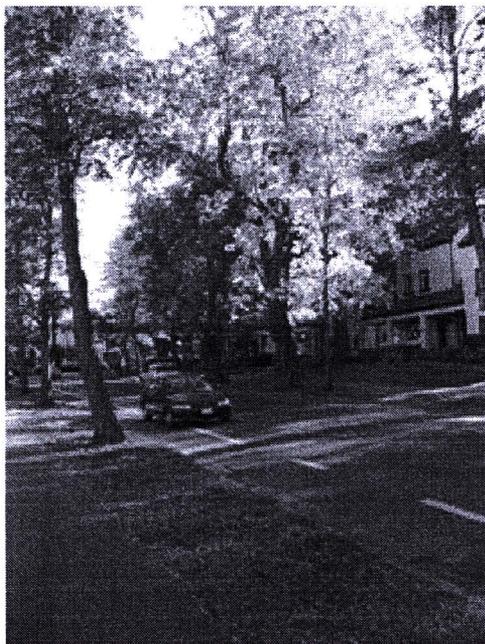
100)



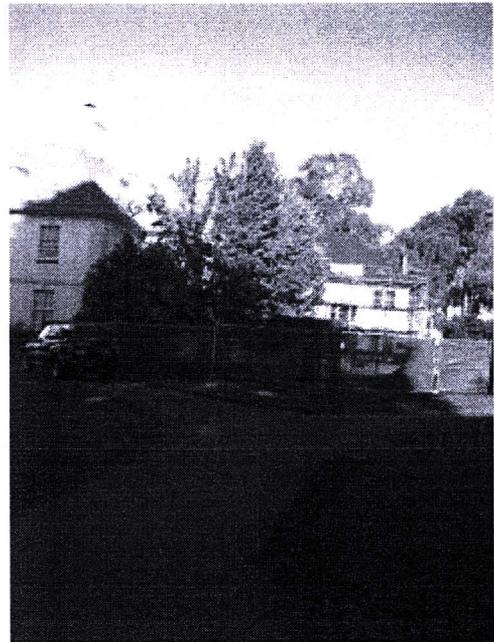
101)



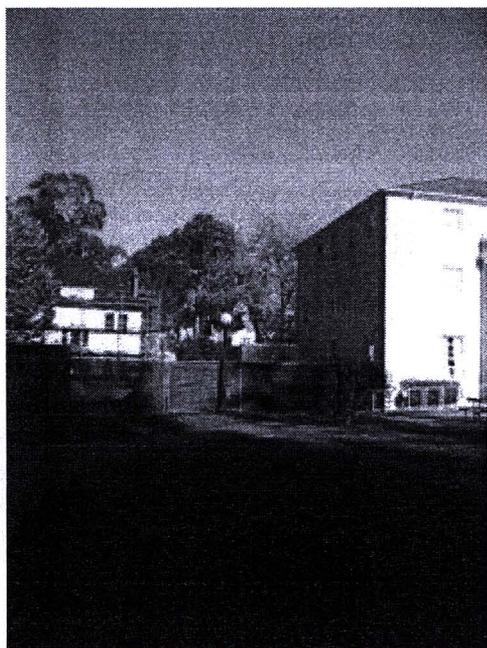
102)



103)



104)



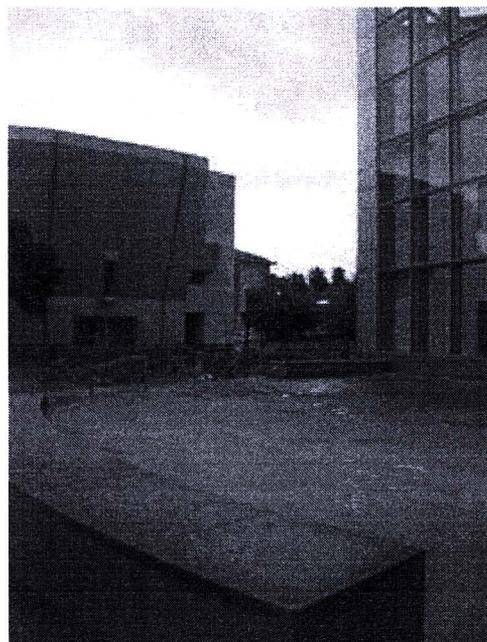
105)



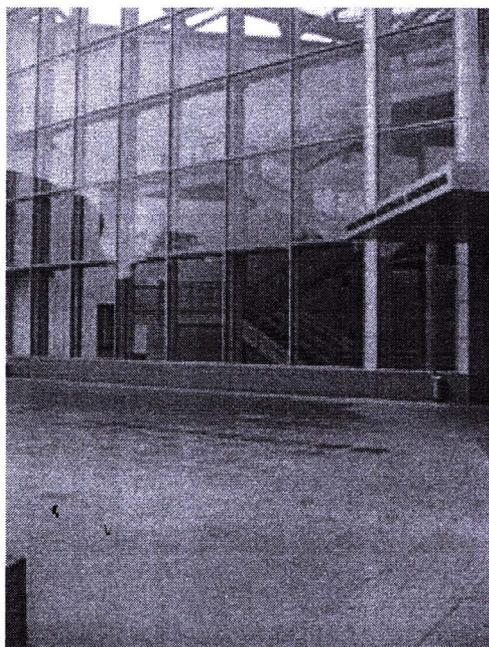
106)



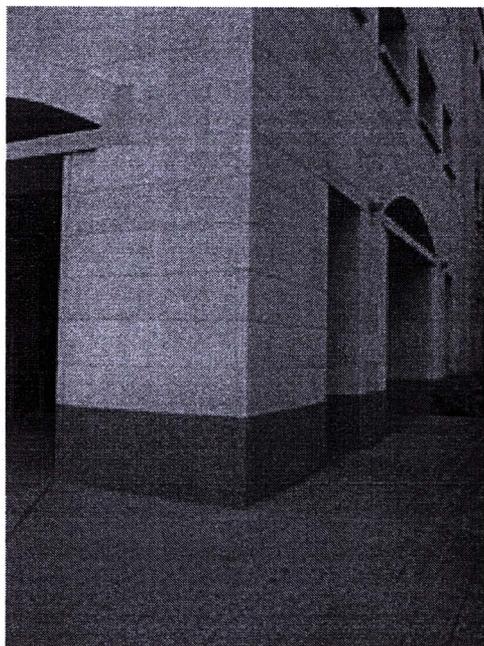
107)



108)



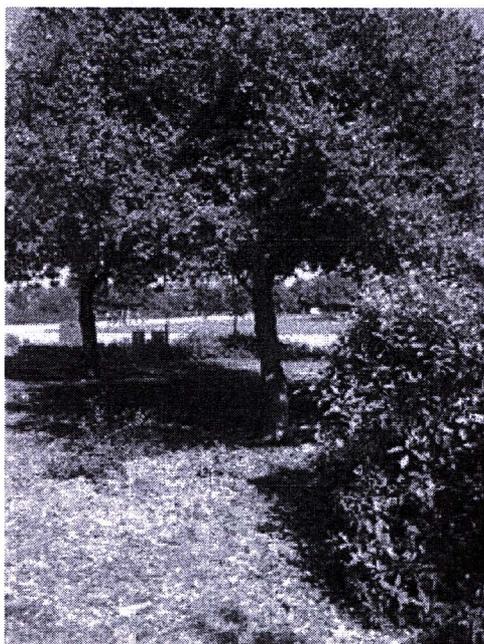
109)



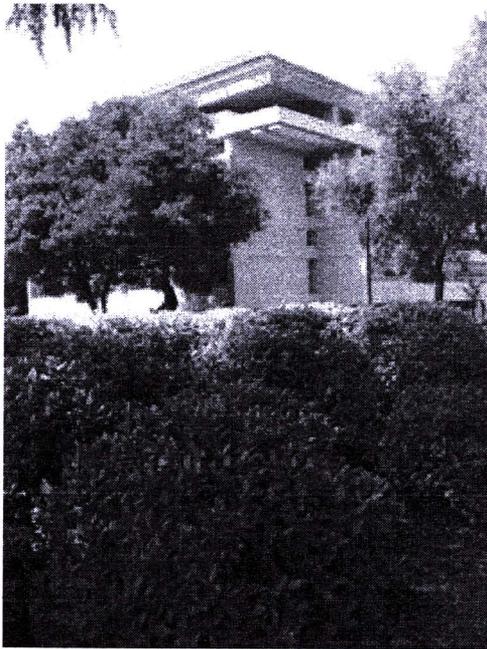
110)



111)



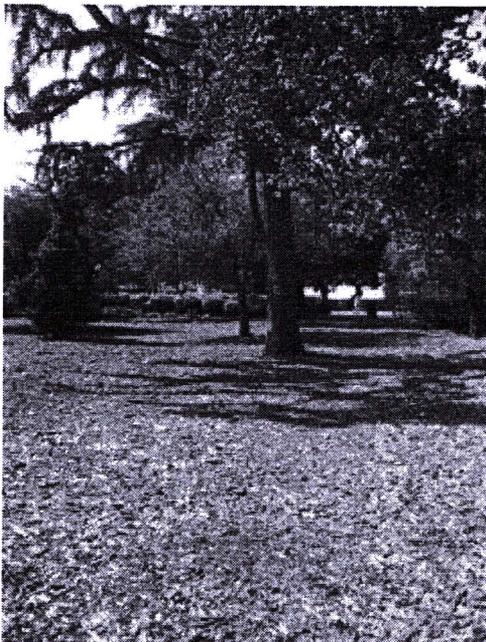
112)



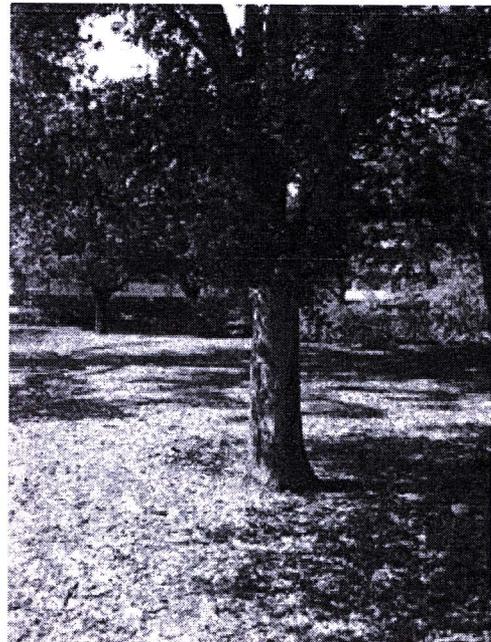
113)



114)



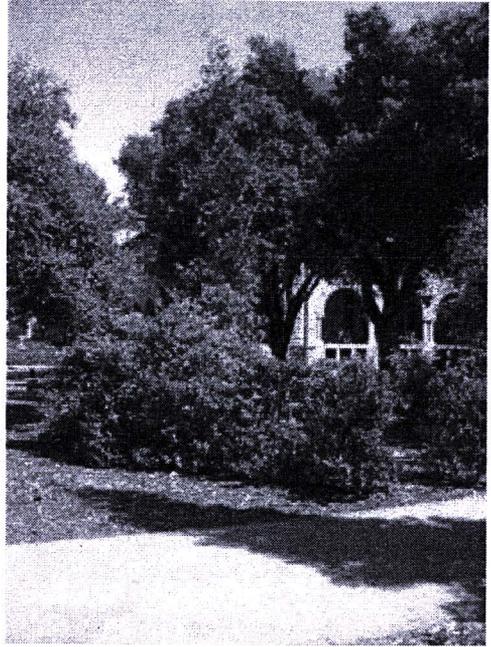
115)



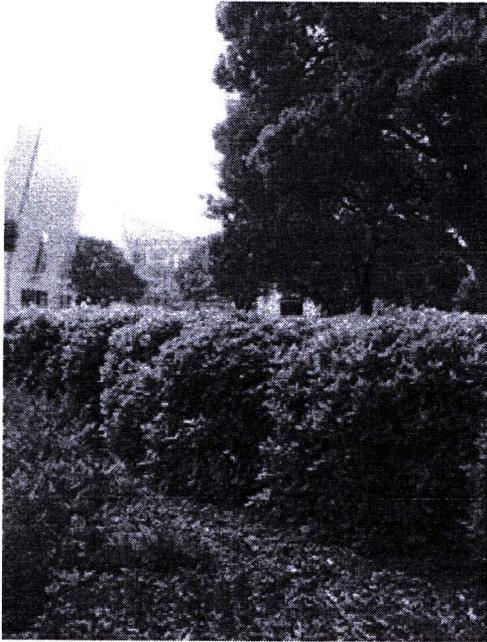
116)



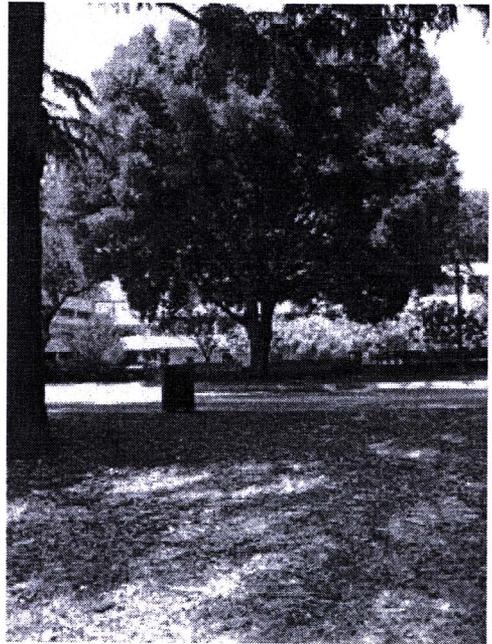
117)



118)



119)



120)



121)



122)



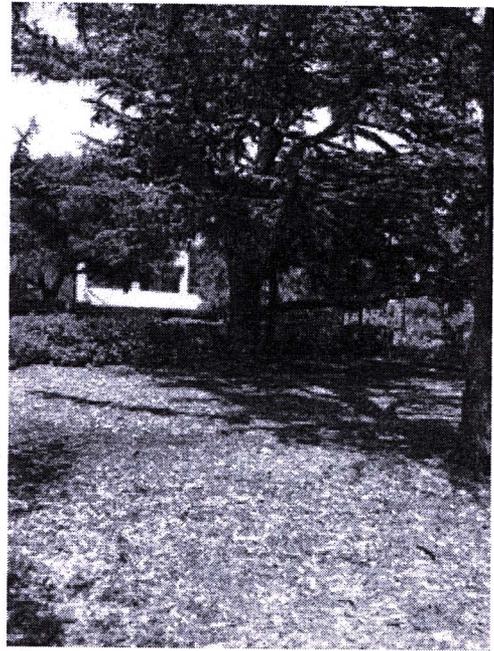
123)



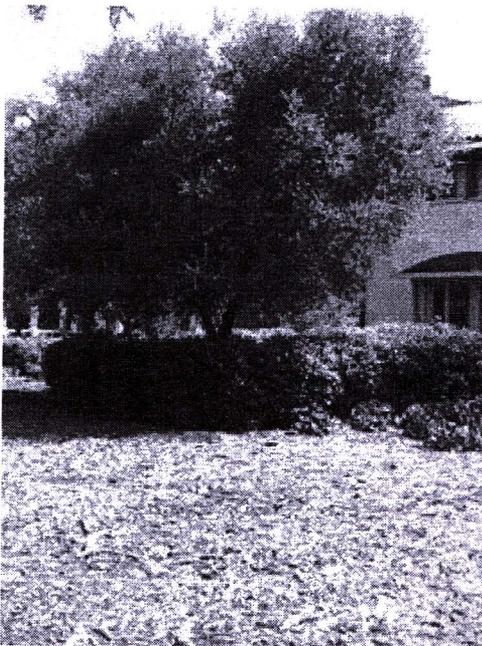
124)



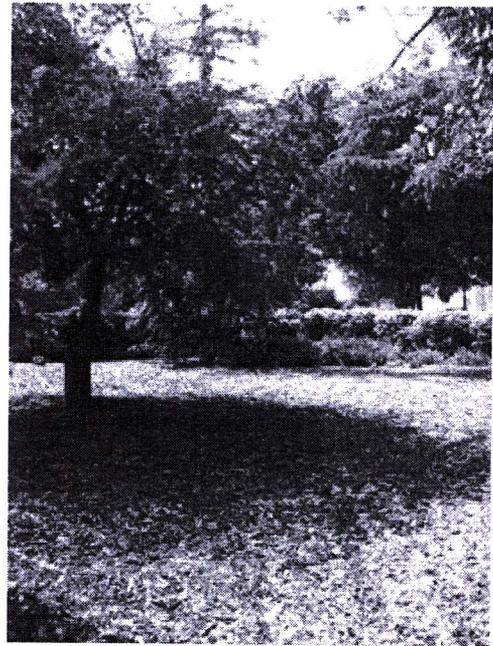
125)



126)



127)



128)



129)



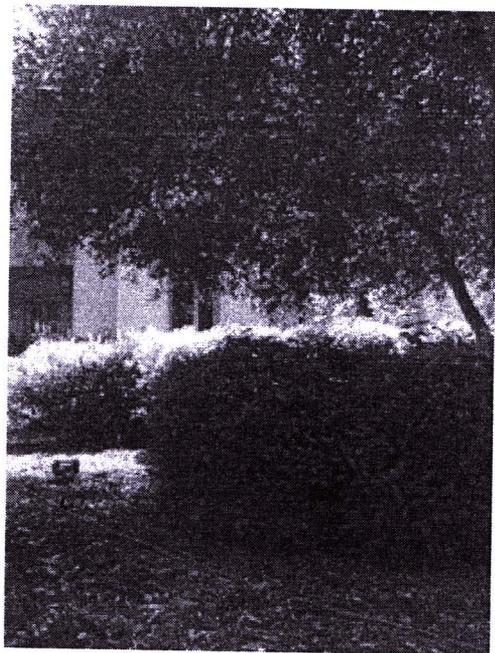
130)



131)



132)



133)



134)

ตารางต่อไปแสดงผลการทดลองการวัดความแม่นยำของการแบ่งกลุ่ม โดยทำการทดลองกับรูป 13 รูปแรกในฐานะข้อมูลการทดสอบ โดยแสดงจำนวนความสัมพันธ์กับเปอร์เซ็นต์ความถูกต้อง

รหัสรูป	จำนวนความสัมพันธ์ในภาพ	เปอร์เซ็นต์ความถูกต้องในการแบ่งกลุ่มความสัมพันธ์
1	138	49.28
2	118	61.86
3	96	44.79
4	154	59.74
5	112	36.61
6	200	68.00
7	76	40.79
8	132	56.82
9	76	53.95
10	176	23.86
11	234	61.97
12	230	55.22
13	226	33.19
รวม	1968	50.25

ตารางต่อไปแสดงผลการทดลองการวัดความแม่นยำของการประมาณความลึก
โดยทำการทดลองกับรูป 134 รูปในฐานข้อมูลการทดสอบ

รหัสรูป	ค่าความผิดพลาดสัมพัทธ์	ค่าเบี่ยงเบนมาตรฐานกำลังสองเฉลี่ย (เมตร)
1	0.5596	39.9604
2	0.5109	35.7234
3	0.3513	10.196
4	0.7156	32.8517
5	0.5962	43.8738
6	0.5088	26.1878
7	0.3933	30.6515
8	0.4413	16.6124
9	0.5652	43.057
10	0.5574	20.1483
11	0.3185	2.6869
12	0.315	5.5989
13	1.2929	6.463
14	0.4218	5.7309
15	1.4562	15.136
16	1.098	25.5771
17	0.254	1.6289
18	0.3522	21.8385
19	0.6647	31.5911
20	0.6255	36.351
21	0.7293	36.6213
22	0.8465	30.1071
23	0.5603	24.515
24	0.5803	29.6498
25	0.3719	10.1875
26	0.4725	22.1028
27	0.3163	4.2759

รหัสรูป	ค่าความผิดพลาดสัมพัทธ์	ค่าเบี่ยงเบนมาตรฐานกำลังสองเฉลี่ย (เมตร)
28	0.6836	46.2152
29	0.4279	22.4724
30	0.3267	14.0167
31	0.4298	14.831
32	0.539	21.2754
33	0.4055	15.2476
34	1.0839	7.477
35	0.4649	23.7861
36	0.4889	20.3504
37	0.444	16.4825
38	0.4328	14.2573
39	0.488	26.2325
40	0.4332	13.3197
41	0.4806	19.7912
42	0.4756	27.0687
43	1.0237	39.6172
44	0.8399	9.9899
45	0.5374	41.1257
46	0.5029	20.2968
47	0.3828	13.4832
48	0.3886	14.1984
49	0.4548	16.1798
50	0.4684	25.0014
51	0.9837	11.901
52	0.4272	23.3517
53	0.53	19.3895
54	0.485	20.0945
55	0.4594	20.6851
56	0.5188	21.5052
57	0.423	13.9042

รหัสรูป	ค่าความผิดพลาดสัมพัทธ์	ค่าเบี่ยงเบนมาตรฐานกำลังสองเฉลี่ย (เมตร)
58	0.3781	13.1588
59	0.3417	6.6839
60	0.3585	9.694
61	0.6211	43.9733
62	0.5895	44.557
63	0.4833	35.0319
64	0.5761	37.3335
65	0.2384	2.2336
66	0.4323	19.8572
67	0.5967	47.3977
68	0.4879	41.5941
69	0.5769	35.4594
70	0.623	8.8105
71	0.3101	12.2121
72	0.3086	5.3445
73	0.293	3.9128
74	0.2291	2.7241
75	0.3445	6.9699
76	0.5581	34.1752
77	0.5305	41.2324
78	0.623	48.8284
79	0.6037	42.6459
80	0.5618	40.2619
81	0.5998	37.711
82	0.3734	29.3638
83	0.5527	34.7426
84	0.4512	21.34
85	0.3195	11.6184
86	0.4323	13.291
87	0.511	32.8362

รหัสรูป	ค่าความผิดพลาดสัมพัทธ์	ค่าเบี่ยงเบนมาตรฐานกำลังสองเฉลี่ย (เมตร)
88	0.5596	27.8582
89	0.5488	41.2921
90	0.4402	16.8797
91	0.3964	23.6678
92	0.4364	21.2069
93	0.4578	40.0371
94	0.3966	31.7718
95	0.3443	27.5843
96	0.6599	48.5763
97	0.4214	20.863
98	0.3134	25.7882
99	0.4653	35.5477
100	0.5621	23.8403
101	0.9472	18.1568
102	0.6072	46.393
103	0.4754	29.4976
104	0.6144	42.2
105	0.5837	45.3261
106	0.5896	46.2414
107	0.3398	20.5232
108	0.7773	43.518
109	0.5443	24.5674
110	0.3708	7.1266
111	0.6454	45.8253
112	0.7921	15.8371
113	1.1483	30.4526
114	0.4558	28.6816
115	0.9859	18.4575
116	1.0189	12.5295
117	0.3684	24.823

รหัสรูป	ค่าความผิดพลาดสัมพัทธ์	ค่าเบี่ยงเบนมาตรฐานกำลังสองเฉลี่ย (เมตร)
118	0.4359	28.0209
119	0.666	34.7568
120	0.5231	25.0817
121	0.3702	13.4841
122	0.462	19.9441
123	0.7092	28.2952
124	0.9413	17.8177
125	1.4077	18.9493
126	0.5038	18.9988
127	0.3631	18.3081
128	0.7058	16.6664
129	0.5355	21.7988
130	0.385	17.0036
131	0.4118	14.9147
132	0.3	11.9978
133	0.4124	3.292
134	0.8197	26.7381



ประวัติผู้เขียนวิทยานิพนธ์

นายอาชวี สรรพอาษา เกิดวันที่ 11 กันยายน พ.ศ. 2531 สำเร็จการศึกษา
ระดับมัธยมศึกษาที่โรงเรียนเซนต์คาเบรียล จากนั้นจึงเข้าศึกษาต่อที่คณะวิศวกรรมศาสตร์
จุฬาลงกรณ์มหาวิทยาลัย ในปีการศึกษาที่ 2548 และสำเร็จการศึกษาในระดับปริญญาบัณฑิต
ภาควิชาคอมพิวเตอร์ในปีการศึกษา 2551 และเข้าศึกษาต่อในหลักสูตรวิศวกรรมศาสตร
มหาบัณฑิตต่อในปีการศึกษา 2552 ในภาควิชาคอมพิวเตอร์ คณะวิศวกรรมศาสตร์
จุฬาลงกรณ์มหาวิทยาลัย

